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REGENERATION OF THE THYROID GLAND AND THE PREVENTION OF RECURRENT GOITERS *

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The prevention of recurrent goiter is an important problem in the treatment of thyroid disease. A review of patients seen complaining of recurrent goiter permits the following classification: (1) pseudorecurrences; (2) recurrence of goiter without symptoms, and (3) recurrence of goiter with symptoms.

PSEUDORECURRENCES

Pseudorecurrences are generally the result of (1) diagnostic error; (2) symptoms due to permanent lesions, and (3) insufficient operation. This paper will not deal with that group.

RECURRENCE WITHOUT SYMPTOMS

In the group of recurrences without symptoms are placed those patients who have a definite enlargement of the remaining thyroid without the symptoms of hyperthyroidism and a normal or subnormal basal metabolic rate. The following pathologic processes have been recognized: (1) colloid goiter, which is probably the most common form; (2) diffuse adenomatous goiter, and (3) true adenoma. Patients with a goiter of the true colloid type are relieved by desiccated thyroid. Goiters belonging in the latter two groups are not benefited by medical treatment, and the majority probably eventually become toxic.

RECURRENCE WITH SYMPTOMS

In the group of recurrences with symptoms are placed those patients who give a history of complete relief following operation, but in whom there has been a redevelopment of the goiter which has again become toxic. All three of the common types of toxic goiter, namely, toxic hyperplastic goiter, diffuse adenomatous goiter and true adenoma, have been seen. I have seen the development of diffuse adenomatous goiter as a recurrence following operation on the toxic hyperplastic type, but have never seen the toxic hyperplastic type as a recurrence following operation on the diffuse adenomatous goiter. Diffuse adenomatous goiter is the most common in this group. There is some question whether the recurrent adenoma is a newly formed tumor or is instead the development of a small adenoma overlooked at the time of operation.

In order to understand recurrences intelligently and to prevent them if possible, it is necessary first to know the method of regeneration, and second the method of controlling or preventing atypical regeneration.

METHOD OF REGENERATION

That regeneration would take place following operation on the thyroid was shown by Wagner [1] in 1884 and confirmed by Horsley [2] in 1886. Halstead,[3] in 1896, showed that if at least one eighteenth of the thyroid was left, there would be sufficient regeneration to meet the needs of the experimental animal. Marine and Lenhart,[4] in 1909, studied the effect of iodine on thyroid regeneration in normal thyroids, colloid goiters and hyperplasia. In the normal gland, they found that hyperplasia always took place if a maximum amount of thyroid had been removed, and that iodine would not prevent it. In colloid goiters, the same results were obtained. In the hyperplastic goiter, they found that the gland would approach the normal following the removal of a major portion much more quickly when iodine was administered than when it was not, and they suggested at that time that iodine would probably be of therapeutic value. They found that pure iodine was taken up more rapidly than iodine salts. They concluded as the result of their work on all types of thyroids that there was a minimum amount of thyroid tissue below which iodine would not protect against compensatory hyperplasia, and suggested that perhaps desiccated thyroid would inhibit the hyperplasia.

Loeb,[5] in 1919, working on guinea-pigs, found the evidence of hyperplasia appearing as early as the second week and completed ordinarily by the end of twenty-two days, and always by the end of thirty days. The evidence of hyperplasia persisted for four or five months. In 1926, in a subsequent report, he [6] stated that potassium iodide does not prevent or diminish the hyperplasia seen in guinea-pigs in the thyroid following extirpation of a greater portion of the gland. Since this report by Loeb, Marine [7] has studied the effect of iodine on the thyroid of guinea-pigs. His observations are at variance with those of Loeb, and in agreement with his previous work on other animals. He suggests

* Read before the Section on Surgery, General and Abdominal, at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 20, 1927.

1. Wagner: Ueber die Folgen der Extirpation der Schuldrüse nach Versuchen an Thieren, Wien. med. Bl. **7**: 771, 1884.
2. Horsley, V.: The Pathology of the Thyroid Gland, Lancet **2**: 1163, 1886.
3. Halstead, W. S.: Experimental Study of the Thyroid of Dogs with Special Consideration of this Gland, Johns Hopkins Hosp. Rep. **1**: 373, 1896.
4. Marine, David; and Lenhart, C. H.: Relation of Iodine to the Structure of Human Thyroids, Arch. Int. Med. **4**: 440 (Nov.) 1909; Normal Colloid or Actively Hyperplastic Containing Compounds, ibid. **4**: 253 (Sept.) 1909.
5. Loeb, Leo.: Studies in Compensatory Hypertrophy of the Thyroid Gland: IV, J. M. Research **40**: 199-265 (July) 1919.
6. Loeb, Leo: Studies on Compensatory Hypertrophy: VII, Am. J. Path. **2**: 19 (Jan.) 1926.
7. Marine, David: Control of Compensatory Hyperplasia of the Thyroid of Guinea-Pigs by the Administration of Iodine, Arch. Path. & Lab. Med. **2**: 828 (Dec.) 1926.

that Loeb's failure to obtain a control of the hyperplasia with iodine was because he removed too great a portion of the thyroid gland, which is in accordance with Marine's earlier statement that if a certain minimum amount of gland was not left, hyperplasia would take place even though iodine was administered.

Crawford and Hartley,[8] in 1925, reported that following lobectomy the first change in the remaining lobe was an increase of colloid, which began within two days and continued to increase until the seventh day. This was followed by compensatory hyperplasia, the evidence of which was present for three or four months.

METHOD OF CONTROLLING REGENERATION

Else, Grow and Lemery,[9] in 1926, in a study of the method of regeneration in rabbits, concluded, first, that as long as there is a sufficient amount of thyroid gland left to supply the necessary thyroxin there will be no changes in the gland; secondly, that when a sufficient amount of the thyroid substance is left so that stimulated activity of the cells can supply enough thyroxin, regeneration will not take place and the increased cellular activity is shown only by an increase in colloid, and, thirdly, that when there is not enough thyroid left to meet the needs of the animal, hyperplasia takes place, developing usually from the interacinar cells of Webber, but also from the intra-acinar cells, and that in each case new acini are formed. In that work, the effect of iodine on regeneration was not studied.

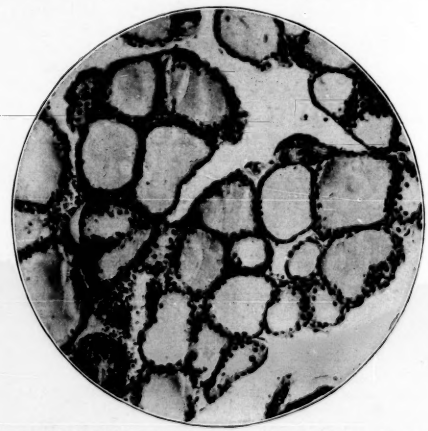

Fig. 1.—Thyroid at time of operation in twenty-day dog not given iodine.

A study of patients with recurrences, and of the tissues removed in those having a subsequent operation, showed that the most common change was an increase in colloid comparable to that found in the second group in our work on rabbits. The limited portion of thyroid left was sufficient by the added stimulation to produce enough thyroxin, but in doing this an over-amount of colloid was produced, resulting in a simple colloid goiter. As this condition was similar to the production

8. Crawford, J. H., and Hartley, J. N. J.: Histological Changes in Thyroid Gland of Rabbits Following Lobectomy, J. Exper. Med. **42**: 193-200 (Aug.) 1925.

9. Else, J. E.; Grow, H. M., and Lemery, C. W.: Regeneration of the Thyroid, an Experimental Study, Endocrinology **10**: 165-174 (March-April) 1926.

*Report of Experiments**

Day	Animals Given Iodine	Animals Not Given Iodine
2	No change.....	No change
4	This gland was of the hyperplastic type, presenting much the same appearance as is seen in the toxic hyperplastic goiter after compound solution of iodine has been given. At the end of four days there was an increase in the amount of colloid, and the gland appeared less hyperplastic	
6	Capillaries distended; a few mitotic figures seen both in the intra-acinar and in the interacinar cells	Beginning of hyperplasia, but no apparent increase in the amount of colloid
8	Definite increase in the amount of colloid; cells lining the larger acini were somewhat flattened from pressure. Mitotic figures were present in both the interacinar cells and the intra-acinar cells	Acini more distended with colloid; beginning of hyperplasia present
10	Mitotic figures present in both the intra-acinar and the interacinar cells	Hypertrophy and hyperplasia of both the interacinar and the intra-acinar cells
12	.....	No appreciable amount of hyperplasia present
14	Increase in the amount of colloid; otherwise not much change	
16	This gland was of the hyperplastic type resembling that seen in the human being after compound solution of iodine has been given. At the end of sixteen days there was a definite increase in the amount of colloid and marked decrease in the amount of hyperplasia, so that the gland appeared nearly normal, except that groups of fetal acini were present. The colloid contained bluish areas	Some hyperplasia present, particularly among the interacinar cells
18	.....	Hyperplasia with beginning formation of new acini. The new acini were apparently from the interacinar cells
20	.....	Hypertrophy and hyperplasia of the intra-acinar cells resembling that of toxic hyperplastic goiter (figs. 1 and 2)
22	Hyperplasia of the interacinar cells and hypertrophy of the intra-acinar cells	Considerable increase in the amount of colloid, with hyperplasia of the interacinar cells
24	Normal gland.....	Very marked increase in the interacinar cells; areas of undifferentiated cells (figs. 3 and 4)
26	Normal gland.....	Marked increase in colloid; hyperplasia of the interacinar cells
28	Normal gland.....	Increase in the amount of colloid
30	Normal gland.....	Very marked increase in the amount of colloid, reaching the proportions of a colloid goiter
38	Gland approximately normal..	Marked increase in colloid presenting the appearance of a colloid goiter. Between the large colloid acini were many small acini giving the appearance of newly formed acini. These contained small amounts of colloid (figs. 5 and 6)
39	.....	This dog had a colloid goiter at the time of operation. Thirty-nine days later the acini varied in size from normal to fetal. Areas of hyperplasia were found in which there were tubular formation and fetal acini
41	Gland was normal except for some increase in colloid	
45	Still some hyperplasia present with interacinar cells and hypertrophy of the intra-acinar cells, with less colloid than normal	
47	There were still some undifferentiated cells, but the gland was approximately normal	
51	.....	Thyroid normal at the time of operation; at fifty-one days, it presented the appearance of a toxic hyperplastic goiter (figs. 7 and 8)
65	Gland normal except for the increase in the amount of the interacinar cells	
69	Gland normal except for slight increase in the number of the interacinar cells	Nearly normal except for fairly large areas of undifferentiated cells. Probably the result of hyperplasia of the interacinar cells

* The thyroids were normal at the time of operation unless otherwise stated.

of ordinary simple goiter, it could have been prevented, I believe, had the patient been given a sufficient amount of iodine to enable the remaining portion of the thyroid gland to do its work more easily. This did not, however, give us sufficient information relative to the prevention of the hyperplastic types.

In order to get more information on regeneration and its control, I then undertook a second series of experiments on dogs. The animals were divided into two groups: one group received compound solution of iodine and had the skin prepared with iodine; the other group did not receive compound solution of iodine and the skin was not prepared with iodine. The two groups were kept on the same floor, as I did not regard it as likely that a sufficient amount of iodine would be inhaled by the noniodine group to produce any effect. A study of the results confirmed this belief.

In operating on patients with a toxic hyperplastic goiter or a diffuse adenomatous goiter, it has been my custom to remove all the thyroid gland except a small

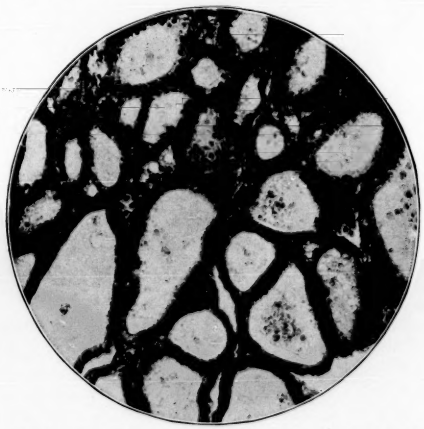

Fig. 2.—Twenty days after operation, same animal as in figure 1: hyperplasia and hypertrophy of intra-acinar cells with some hyperplasia of the interacinar cells.

portion adherent to the posterior capsule. In the work on the dogs, I attempted to leave relatively the same amount of gland as I leave in the operation on patients. In the beginning of the experimental work, a small portion of gland was left on each side. In the dogs with small thyroids, we had some difficulty in recovering enough to prepare sections. In the latter part of the work, one complete lobe and one half of the other was removed in dogs with small thyroids, and a greater portion in the dogs with large thyroids, in order that there might be the same relative amount of thyroid tissue left as in the human being. We had some difficulty with tetany after adopting this method, so that several animals died. The animals were killed at two day intervals up to one month, and at longer intervals up to sixty-nine days, to show the progressive changes and the effect of iodine on these. Owing to difficulty in securing dogs, it was not possible for us to have dogs of the same age, weight or sex; but this does not seem to have made any difference. The accompanying table shows the results of these experiments.

SUMMARY OF EXPERIMENTS

Hyperplasia and hypertrophy were found in both series of dogs, but they were more marked in the series that did not receive iodine during the period of regeneration. The hyperplasia was most marked in cells that

Fig. 3.—Thyroid at time of operation in twenty-day dog not given iodine.

could not be identified with any acini and were interpreted as being from the interacinar cells described by Webber. In the earlier portion of the regeneration period, mitotic figures could be seen in the cells lying between the acini, but in the latter portion of the

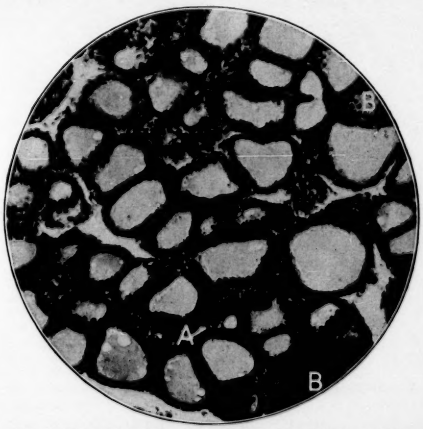

Fig. 4.—Twenty-four days after operation, same animal as in figure 3: *A*, increase in interacinar cells; *B*, undifferentiated cells of probably same origin.

regenerative period these cells occurred in such masses that they could not be positively identified as having sprung from the interacinar cells. However, in the study of the entire series, I believe I can trace the development from the early mitotic figures occurring in

the isolated interacinar cells about which there could be no question to the accumulation of masses the origin of which could not be identified. In one animal there was a definite tubular formation in these cells, such as is seen sometimes in the masses of cells found in colloid goiter of long standing.

With the exception of the forty-five day dog, after the twenty-second day the thyroid gland in the animals receiving iodine was approximately normal, except that some of them showed an increase in the undifferentiated cells lying between the acini. In the forty-five day dog there was still hypertrophy of the intra-acinar cells.

In the dogs not receiving compound solution of iodine not only was a greater amount of hyperplasia and hypertrophy present, but there was an increase in the amount of colloid in the twenty-two day, twenty-six day, twenty-eight day, thirty day and thirty-eight day dogs. In the thirty and thirty-eight day dogs, the increase was so great that it presented the appearance of a colloid goiter. The thirty-nine day dog had a colloid goiter at the time of operation. The colloid was less than normal at the end of the period, but there were tubular formation, fetal acini and areas of undifferentiated cells present. The twenty and the fifty-one day dogs developed thyroids that had the typical appearance of a toxic hyperplastic goiter of mild degree, without the evidence of symptoms. A study of the entire series warrants the conclusion that recurrence following operation depends on the control of regeneration, and that thyroid regeneration can be controlled in animals by compound solution of iodine.

In the work on goiters in the human being, recurrence is not infrequently seen. If thyroid regeneration in animals may assume the proportion of a goiter when

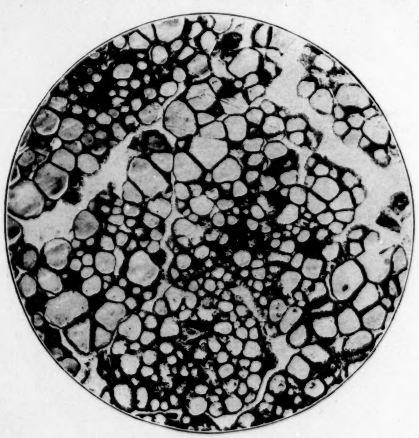

Fig. 5.—Thyroid at time of operation in thirty-eight-day dog not given iodine.

uncontrolled, it is reasonable to believe that the same may occur in man.

About two years ago, I arrived at this conclusion empirically and began giving compound solution of iodine after the operation, as well as before, for the purpose of controlling regeneration, following this later by a small amount of iodine to secure proper thyroid function. Although it has been only two years since this was begun, I have not seen any evidence of recurrence in that time.

The following routine treatment has been followed:

1. The thyroid is saturated with iodine previous to the operation by giving from 10 to 25 minims (0.6 to

Fig. 6.—Thirty-eight days after operation. Attention is called to marked increase in colloid as compared with the section made at time of operation (fig. 5). This presents the appearance of a colloid goiter hyperplasia and new acini formation in a dog not given iodine.

1.5 cc.) of compound solution of iodine three or four times daily according to the severity of the hyperthyroidism. Patients with nontoxic adenomas or diffuse adenomatous goiters are given 10 minims (0.6 cc.) three times daily for two or three days.

2. Following the operation, the thyroid is kept saturated with iodine during the period of regeneration by giving the patient from 15 to 25 minims (1 to 1.5 cc.) of compound solution of iodine by rectum as soon as he is returned to bed, this dosage being repeated three or four times daily according to the severity of the hyperthyroidism preceding the operation. As soon as the patient is able to take it by mouth, 10 minims (0.6 cc.) is given three times a day for one month. Then the dose is cut down to 10 minims (0.6 cc.) daily for another month.

3. A sufficient amount of iodine to meet the needs of the thyroid gland is administered continuously. For this I prescribe the iodized salt if other members of the family have normal thyroid glands; otherwise I give 10 mg. of iodine, in a chocolate tablet, daily.

If patients with toxic goiter are to be cured and recurrences prevented, it is just as essential to give attention to securing proper regeneration and maintaining normal thyroid function after an operation as it is to develop a normal thyroid at puberty and maintain normal function thereafter.

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ABSTRACT OF DISCUSSION

DR. H·RRY G. SLOAN, Cleveland: There is one point in regard recurrence following operation for exophthalmic goiter tc which I wish to direct your attention. Two factors cause an enlargement of the thyroid, iodine starvation and the presence of infection. When iodine is given in the prophylactic treatment of endemic goiter, the thyroid shrinks

in size. When a focus of chronic infection is removed, as in the case of a colloid goiter, the goiter shrinks. During the acute infections, as, for instance, typically in typhoid, there is swelling of the thyroid. We frequently see an exacerbation in patients waiting in the hospital in preparation for operation who have acquired an acute tonsillitis. One comprehends the enormous increase in toxicity that occurs at this time. If we try at that time to iodize the gland by the use of compound solution of iodine, we find that enormous doses are required. We have seen, for instance, how a patient has not gained weight, possibly for three months following a ligation, when it was deemed unwise to do a primary thyroidectomy. When the focus of infection is eradicated, the patient promptly starts to gain weight; the metabolic rate decreases; the pulse rate falls, and the intensity of the disease immediately starts to diminish. The point I wish to draw attention to is that it is possible for a thyroid gland to enlarge even when it has sufficient iodine, as, for instance, in the rare cases of exophthalmic goiter developing in sailors, or in areas where there is an ample iodine supply. We are not invariably able to control the hypertrophy of the thyroid with iodine following operation. Some thyroids enlarge after operation, in spite of iodine. Those are the ones, I think, in which the infectious focus is to blame in a great many instances. What shall we do, then, in case of a recurrence following bilateral thyroidectomy for exophthalmic goiter? First, the patient should be carefully examined to see whether perchance a focus can be located that may be culpable. Many patients will respond remarkably. We know that the nasopharynx and the mouth are the principal offenders, and then we must examine the chest for an old tuberculous process. If we feel that the condition is due to tuberculosis, then it is wise to institute the typical tuberculosis regimen, with fresh air and overfeeding. In case we cannot be sure that there is any infectious focus responsible, then we have to proceed with a secondary operation. I wish to sound a warning in regard to the removal of infectious foci in the presence of acute exophthalmic goiter. These patients respond with tremendous intensity to

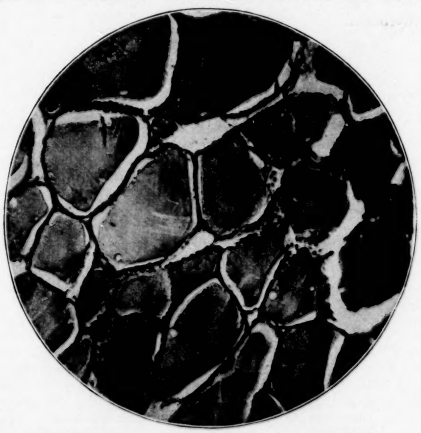

Fig. 7.—Gland at time of operation in dog not given iodine.

trauma, and it is a hazardous procedure to institute any surgical operation in them. I have always been unwilling to subject these patients with exophthalmic goiter, previous to thyroidectomy, to ether anesthesia in order to remove a focus of infection. If one is blessed with skilful nose and throat associates so that one is able to do tonsillectomies under local anesthesia entirely, one is very fortunate.

DR. HOWARD M. CLUTE, Boston: A year and a half or two years ago, we started the use of iodine after operation in all the patients with exophthalmic goiter who had been subjected to thyroidectomy believing that we would have less recurrent or persistent hyperthyroidism after operation. To date, we are unable to say that our operations for persistent or recurrent hyperthyroidism are any less numerous than they were. Of course, one must consider the difference

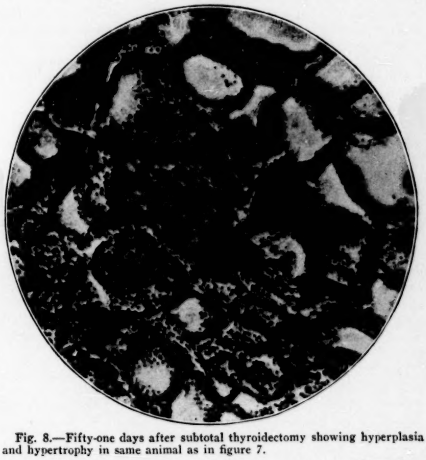

Fig. 8.—Fifty-one days after subtotal thyroidectomy showing hyperplasia and hypertrophy in same animal as in figure 7.

between the persistence of the toxicity (that is, the failure to cure the patient by the original operation) and recurrence. We still feel that iodine should be given for the prophylaxis of recurrence, but as yet we have not seen any great advantage from it. The possibility of cancer of the thyroid gland, we feel, is of a great deal of importance. More attention should be paid to it by physicians. In a recent series of seventy cases diagnosed as cancer of the thyroid gland before operation, at operation, or after operation, forty-six were diagnosed as a malignant condition of the thyroid gland before operation was undertaken. Of the forty-six patients who could be diagnosed clinically as having cancer, only seven were alive after an interval of from six months to six years; twenty were dead, and the remainder had recurrence of the malignant condition. Obviously, then, if we wait until we can diagnose cancer of the thyroid gland clinically, the hope of recovery is very slight. Cancer of the thyroid gland arises in 90 odd per cent of the cases in a preexisting adenoma. An adenoma of the thyroid gland can be removed with practically no surgical mortality in its early stages. We should remove any nodule from the thyroid gland, since it is a safe operation, and since it is the only way that we can be sure of preventing 90 or 95 per cent of malignancy of the thyroid. There is apparently an acute type of malignant condition of the thyroid gland. It seems to me that this malignant change does not occur in an adenoma. We had sixteen patients in this series who reported to the clinic for treatment within six months of the occurrence of symptoms, some of them within four weeks of the time that they first saw the thyroid tumor. Of the sixteen patients who so reported, ten were dead in less than six months and two had recurrences.

DR. E. P. SLOAN, Bloomington, Ill.: There are undoubtedly fewer secondary operations and fewer recurrences since the goiter surgeons feel justified in removing larger amounts of the gland, when indicated. Any time that a large portion of abnormal thyroid gland tissue is left in one mass, there is almost certain to be a recurrence. A great deal of the improvement in the after-results should be attributed to the improvement in surgical technic and to the fact that it has become recognized that small bits of gland are not so likely

to proliferate with a return of symptoms as are large portions left in one mass. Since we have been destroying the malignant goiters by slow heat, instead of dissecting them out, our results have been very much better; and since we have been leaving radium in the cavity that has been formed and following up with radical and really extreme doses of deep roentgen ray, our results have been still better. There have been no evidences of a return of the malignant condition in five out of twenty-seven cases of definite malignant growth in which extension to the surrounding structures had occurred; in thirteen of these, operation had been performed more than six years before, and in fourteen, more than four years before by this method, while during the same period ten other goiters were removed by radical dissection and in every one of these cases there is evidence of a return of the malignant condition. In thirty-nine patients in whom the malignant condition was not diagnosed until the examination of the specimen after operation, four have had a return of the malignant growth within two years subsequent to operation, in spite of the fact that in every case almost complete extirpation was done, followed by radical roentgen-ray treatment. Two of these four patients have been subjected to reoperation to destroy the involved surrounding structures, as well as the remaining portion of the gland by slow heat; this was followed by radium and roentgen-ray treatment, and in both cases the malignant condition is checked for a time. How long this will last we do not know. The slow heat is applied directly to the exposed gland, with a Percy cautery, until even the overlying skin is hot.

DR. WALLACE I. TERRY, San Francisco: Iodine is preventive of endemic goiter, but iodine is not curative of any goiter. Iodine preparatory to operation for a hyperplastic thyroid is of the greatest value, but it should be used for a limited period of time, not exceeding two weeks. Operation can be done in one stage in the vast majority of cases, nowadays. Preliminary ligations are seldom necessary, in our experience. It has been my practice for a number of years to use iodine postoperatively in the hyperplastic cases, and not in the adenomatous ones. Possibly a repetition of Dr. Else's experiments on dogs in a nongoitrous district might show a different microscopic picture. He lives in a district where goiter is endemic. If the same thing were done down in the southern part of the United States, where goiter is not endemic, the dogs' thyroids at the end of twenty, thirty, forty or fifty days without iodine might not show the same hyperplasia. All but one of my patients with cancer of the thyroid are either dead or have recurrences. All of those in whom the capsule itself had not been broken through are still alive. I have not seen any good results yet, except for prolongation of life, from the use of roentgen rays or radium. They have not cured any of these cases in my hands.

DR. J. TATE MASON, Seattle: There is now so much talk about the goiter situation that it must be very confusing to men not living in goitrous districts. Probably the best thing that one can do if one does not live in a goitrous district is to pick out some one man familiar with the subject and follow his ideas. If one does live in a goitrous district then one had better follow out one's own experience to some degree and improve on one's own experience by studying that of other men. In our section (and ours is a goitrous district) we believe that the treatment of exophthalmic goiter is fairly well handled, particularly if the patient is seen early. There are two groups of cases that we see in our part of the country —and they are types that are seen all over the country—in which a correct diagnosis is very easily overlooked. I refer first to the group of young girls who so rapidly develop exophthalmic goiter, without particularly typical symptoms, that they will die within a few weeks of the appearance of the first symptoms. The second group includes persons past 40 years of age who become so rapidly ill from exophthalmic goiter that within a few weeks they are very sick. Such a patient does not have exophthalmos or enlargement of the thyroid gland, although the gland is a bit firmer than normal. In the past, we have not recognized these cases early. Tuberculosis or malignant growths have been suspected, and we have overlooked the rapid pulse and the slight bronzing of the skin, usually early symptoms, in this group. I was very much interested this morning when Dr. Henry Plummer reported 2,500 cases of exophthalmic goiter in which operation had been performed within a year from the time of the first symptom, with a mortality of 0.28 per cent. That is practically nil. But in children of more than 1 year, there was a mortality of 3.8 per cent. This is very important. We have not been able to control the hyperfunctioning adenoma, though Dr. Lahey and some other workers report a mortality of 2 per cent. In our group of about 350 cases, which is small, the mortality is about 5 per cent, and I do not know just how we could lower it. Probably too much has been said about goitrous districts. There are cases of hyperfunctioning thyroid all over this continent, and the physician should always bear in mind, no matter in what district he is, that when a patient comes in to us who is at all nervous, it should first be proved that he does not have an exophthalmic goiter. If the patient has lost much weight, and if he has a good appetite and is not diabetic, he invariably has a hyperplastic thyroid.

DR. LAWRENCE W. SMITH, Boston: After all, we often wonder just what a malignant condition of the thyroid is, even when we see the specimen under the microscope, and I know of no other field, even breast or uterine surgery, in which the need for a pathologist is greater at the time of operation. Even with frozen section diagnosis, or with permanent section diagnosis, we are not always sure that the condition is malignant. This has been borne out by the series of approximately 100 presumptive cases which we have had an opportunity to examine microscopically. Most of the patients who have been diagnosed as having carcinoma and who are still living present the histologic picture af a papillary adenocystoma with suggestive evidence of malignant degeneration. I think that Dr. Graham's comment during the past few years in regard to vessel invasion as the most important histologic criterion for the diagnosis of a malignant condition cannot be overemphasized, and it should be borne in mind at the time of operation.

DR. J. EARL ELSE, Portland, Ore.: I omitted stating the amount of thyroid gland that was left in our experimental work. In operating in the human subject for exophthalmic goiter and for diffuse adenomas, we remove all of the gland, except a small portion adherent to the posterior capsule. In the experimental work on animals, we tried to leave the same amount of gland. Dr. Sloan referred to the rôle of infection. I think that infection affects the thyroid gland in two ways: First, by the direct action of the toxin on the cells of the thyroid gland, on every other cell in the body, and second, by anything that increases bodily function, whether disease or other factors, since more secretion is demanded from the thyroid and consequently more effort on its part is required. I agree that the removal of foci of infection is a dangerous procedure in the presence of hyperthyroidism. Patients often die or develop a very acute hyperthyroidism as a result. If the focus can be easily drained and removed, and if one is absolutely certain that that is what is causing the trouble, it might be worth while to try to remove it; but, as a general procedure, if toxic goiter and other infections are present it is better to ignore all such complications until the toxic goiter has been taken care of. I want to emphasize what Dr. Terry said: Iodine prevents goiter, but it does not cure it. This is the wrong place to say it. It should have been said in the medical section, because they are the fellows who are sending us some bad cases because of giving too much iodine. The use of iodine is important, as Dr. Mason has said, in all sections of the country. There is goiter everywhere. I am sorry that there is a report going out relative to the evil effects from the use of iodine salt. It is true that iodine salt harms a few; but the thousands that are benefited, and the millions that are going to be protected from goiter in the future, make the few that are harmed insignificant.

Good Habits a Basic Function of Education.—The development of good habits is one of the basic functions of education. When a child is acquiring habits he is being educated.—Payne quoted in Dansdill's Health Training in Schools, p. 218.

A VARIATION IN THE OPERATIVE TREATMENT OF STRUCTURAL SCOLIOSIS *

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The development of the operation which I shall describe may perhaps be made clearer if I outline the steps of its gradual evolution.

On my return from the war in 1919, I undertook the treatment of a number of patients with scoliosis, among whom was J. M., a boy who had already been under treatment for a number of years. This treatment had consisted of jackets of various types, none of which had succeeded in checking the progress of his deformity, which went on, as may be seen in the accompanying illustrations, to the most distressing extreme. The rotation of the vertebrae and the consequent distortion of the ribs made so sharp a convexity posteriorly that in spite of the most careful padding and personal application of the jacket, the patient would from time to time develop a pressure sore. He would then enter the hospital, have his jacket removed and lie in bed until the sore healed. This was not only tedious but, as time went on and the resistance of the tissues was lowered, it became steadily more frequent, so that finally he presented an ulcer over the point of the greatest prominence of the ribs. The ulcer was once successfully excised, with primary union of the sutured gap, but on reapplication of a jacket it promptly recurred.

It was evident, therefore, since the ulcer was secondary to the bony deformity, that to eliminate it the deformity must be reduced. I therefore excised the most prominent portion of the ribs. The deformity

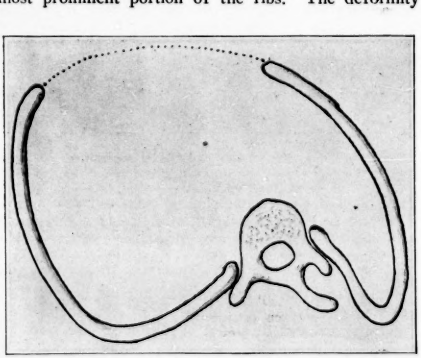

Fig. 1.—Diagrammatic cross section of a scoliotic thorax to illustrate the deformity of the vertebra and thorax. This is entirely schematic, and does not represent the actual deformity, in which the ribs overlap and run almost vertically up and down.

was so extreme that the ribs were found running practically in a vertical direction, and overlapped, so that when about 3 inches of the most superficial part was removed, another rib was found to lie beneath it, and beneath that a third. It was thus impossible to determine which ribs they were. About 3 inches of the uppermost was subperiosteally removed, about 2 inches of the next, and 1 inch of the third, beneath which the pleura was encountered.

The patient was at once replaced on the convex stretcher frame. The wound healed by first intention. The deformity was much reduced, and though the patient has since worn apparatus continuously, the pressure sore has never recurred. This rib resection for the cure of pressure sores and the improvement in the external appearance of the trunk represented the first step in the development of the operation.

In operating in the most severe types of scoliosis, both idiopathic and paralytic, I had been disturbed as to the probability of the success of the usual operation

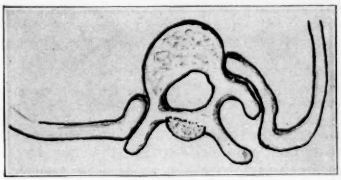

Fig. 2.—The denuded area on the laminae and sections of ribs split longitudinally laid in contact with it.

because of the anatomic abnormalities encountered. In cases of deformity of long standing, the vertebrae are found so rotated that the laminae and articular facets on the convex side of the curve are inaccessible. They are overhung on their mesial aspect by the spinous processes, and on their lateral aspect by the distorted convexity of the ribs. The vertebrae themselves are much deformed. The laminae on the concave side are long and broad, while on the convex side they are so short and narrow as to be practically nonexistent. In such cases, therefore, it appeared to me that the routine Hibbs fusion operation was unsatisfactory because only the concave side of the spine was available for fusion. Its efficiency would appear to be diminished by at least a third, which was not desirable, particularly in these most severe cases.

It thus seemed that a reinforcement of the usual fusion by means of a bone graft was indicated. The operation is so difficult and prolonged, particularly in these most unfavorable cases, that to complicate it by taking a bone graft from the tibia did not seem justified. It then occurred to me that two birds might be killed with one stone by using sections of the most prominent ribs as grafts, adding to the stability of the fusion by bone graft, and decreasing the unsightly protrusion of the ribs.

In the next severe case, then, such a proceeding was undertaken. As much of the usual fusion technic as could be performed because of the deformity was carried out. The skin was then dissected back over the protruding ribs, the muscles cut through, and the most prominent ribs exposed. The periosteum was longitudinally incised and stripped back, and a section of rib about 3 inches long removed. Shorter sections were removed from the two underlying ribs. The periosteum was sutured and bleeding points were ligated. The ribs, whose curves by some fortunate coincidence of nature almost exactly fitted the curve of the spine, were laid in place on the concave side of the curve. The spinous processes were then split in two directions, lon-

* Read before the Section on Orthopedic Surgery at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 19, 1927.

gitudinally and vertically, and the sections broken down so as to overlap the ribs and interdigitate with each other. The wound was then closed in the usual manner, and the patient returned to bed without any supporting apparatus except a dressing. As soon as his general condition seemed to warrant it, he was replaced on the convex stretcher frame, usually in a week or ten days. While on the frame, during the eight weeks

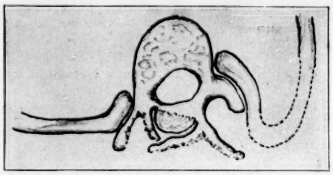

Fig. 3.—The transverse and spinous processes split and overlapped across the graft.

which I regard as the normal convalescent period, the deformity both of the ribs and of the spine has seemed still further to improve.

The operation was first performed, April 6, 1925. Since that time I have operated on nine patients. It has been modified according to the peculiarities of the individual case. The ribs have sometimes been resected through a separate incision, a procedure which, except for the blemish of a second scar, I am inclined to favor, because I feel that the extensive dissecting back of the skin, the exposure of such a large denuded area and the considerable traction necessary add to the shock of an already severe operation. On occasions it has been necessary to perform the operation in two stages, or to interrupt it because of the patient's poor condition. In these cases the resected portions of the ribs have been

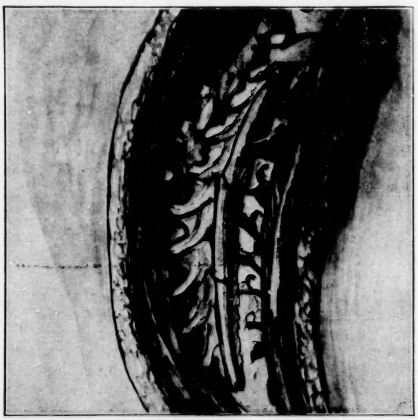

Fig. 4.—Drawing of operation on a left dorsal curve, showing the sections of ribs laid in position.

preserved in ether, then boiled before the second operation, and used as dead grafts. The ribs have sometimes been split to expose the cancellous bone. All the wounds have healed by first intention; none of the grafts, whether transplanted immediately or later, have been extruded, and in all cases the fusion of the area operated on has been firm and the external appearance of the patients' backs improved to varying degrees.

The point which I regard as most important, far more so than the details of any particular operative technic, I have reserved for the last. It has perhaps already been noted that I have referred to the severity of the operation and to the poor quality of the patients from the standpoint of surgical risk. It would thus seem natural to inquire as to why one elects to perform a most severe operation on such poor operative subjects as patients suffering from advanced degrees of curvature of the spine. The answer is that one does not, but what is the alternative? The patients, as we see them at the Hospital for Ruptured and Crippled, are cripples of long standing. They have experimented with all forms of treatment, and in spite of any and all such, have grown steadily worse. The only method of checking, or improving, their condition is to place

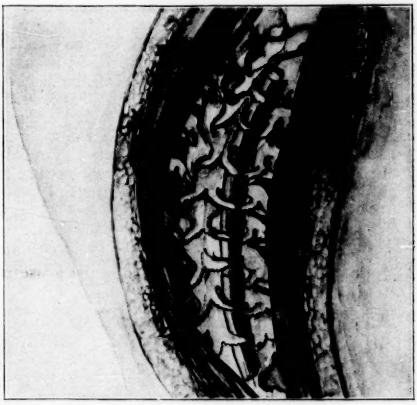

Fig. 5.—The transverse processes and spinous processes split and overlapping the grafts.

them on a convex frame, and life on a frame would appear to be, to say the least, undesirable. Any apparatus that could reasonably pretend to be effective would be so cumbersome and uncomfortable that its employment would seem unjustified. When I say that the patients are getting worse I am not, as a specialist, speaking of their spines but of the patients themselves. Their general constitutional condition is bad, and we know how few such patients attain even middle age. It has been explained in every case to the parents, and, in patients of sufficient maturity to the individuals themselves, that the operation was to be performed not as a cosmetic indulgence but as a prophylactic, life saving measure, for its effect on the general constitutional condition. I have been fortunate thus far in having no mortality, but had I been less so, I should still regard the constitutional improvement in the surviving patients as sufficient justification for the risk involved.

1. Patients suffering from the severest forms of paralytic scoliosis, or from scoliosis from any cause, are in poor constitutional condition and likely before middle age to be victims of intercurrent disease.

2. Any ambulatory apparatus thus far devised if comfortable is ineffective, and if effective is uncomfortable.

3. Because of the anatomic peculiarities of this type of case, the routine Hibbs operation is to us impossible of performance.

4. Resection of a certain number of protruding ribs has improved the patient's appearance, and appears to have a favorable influence on the deformity of the chest and secondarily on pulmonary ventilation.

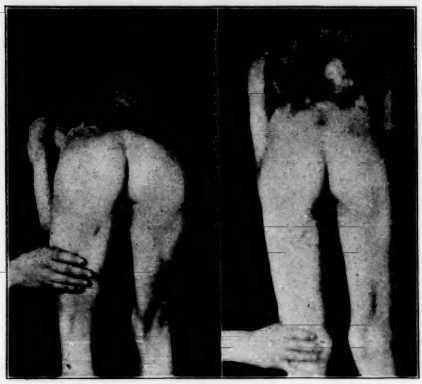

Fig. 6 (case 2).—Appearance before operation, April 5, 1925, and after operation.

5. The employment of the resected portion of the ribs as homogeneous bone grafts has proved a useful adjunct to the ordinary operation.

6. The postoperative constitutional improvement has justified the unusual risk of the operation.

71 Park Avenue.

ABSTRACT OF DISCUSSION

DR. H. W. ORR, Lincoln, Neb.: Dr. Whitman's procedure makes it possible not only to perform a fusion operation, which is often needed very badly, but to make that cosmetic improvement which many of these patients so much desire. The only suggestion that occurred to me was with regard to the type of incision. Dr. Whitman called attention to the fact that he has in his later operations employed two incisions rather than one to avoid the extensive dissection involved in the single incision. He makes the two incisions practically parallel, one along the spine and the other over the ribs in the region where he desires to make the rib removal. A curved incision below the point of greatest convexity seems to be an easier incision to use and one that would be less likely to give trouble on account of pressure in the employment of subsequent apparatus. The curved incision, reflecting the skin-flap back over the convexity, will be easier to close and leaves no scar over the point where pressure may occur. I have generally employed grafts, because in this type of case I have found the Hibbs fusion much more difficult to do and a little less certain in its results. We should not lose sight of the fact that this is, or may become, in the hands of those who are less experienced with extensive surgical procedures, a rather formidable operation, but certainly if the patients are selected carefully, no apprehension need be felt about the feasibility of the operation.

DR. SAMUEL KLEINBERG, New York: Dr. Whitman has limited himself to a consideration of the severe type of scoliosis in which there is, in addition to the deformity of the vertebrae, conspicuous distortion of the trunk as a whole and of the ribs in particular. In the severe cases it is impossible to perform the Hibbs fusion operation thoroughly on the convex side of the curve. It is this fact which some years ago led me to use beef bone grafts, and I have performed a Hibbs fusion in about seventy-five cases, inserting a stout long graft of beef bone on the concave side of the curve. Of course, autogenous bone is more desirable than beef bone. In the moderate cases, however, when there is no occasion to operate on the ribs, the beef bone can be used advantageously. In the severe cases in which there is marked compression and backward projection of the ribs on the convex side, it is desirable to utilize the method described by Dr. Whitman. I believe that the operation ought to be performed in two stages. In a preliminary operation the back can be flattened considerably by removing large segments, from 3 to 5 inches long, from four or five ribs at the apex of the curve. The flattening of the ribs and the improvement of the appearance of the back will not be sufficient or satisfactory unless large sections of ribs are removed. It may also be necessary to remove part or most of several transverse processes. The rib segments can be preserved in ether and used as grafts at the second stage or the fusion operation. As Dr. Whitman stated, the approximation of the ribs on the convex side is so close and their downward inclination is increased so much that they are placed in an almost vertical position; they overlap and are practically in contact. The lateral compression of the ribs may be extreme. In one case, the posterior part of the body of the rib, that portion external to the angle, was in contact with the transverse process. The lung tissue in this region was either atelectatic or pushed forward. I learned also that the crest in a razor-back deformity was due not only to the angulation of the ribs, but also to the backward projection of the transverse processes. In one case, I found, after removing sections of several ribs, that the crest of the deformity remained and was due to the transverse processes, several of which had to be amputated. I agree with Dr. Whitman that in cases of severe scoliosis, the removal of large segments of several

Fig. 7 (case 2).—Two years after operation, showing unusually heavy consolidation of the area operated on.

ribs on the convex side of the curve will satisfactorily reduce the deformity of the back, and subsequently the sections of the ribs can be used as grafts in a fusion operation to control the deformity of the spine.

DR. EDWIN W. RYERSON, Chicago: Dr. Whitman has made a very distinct contribution to the surgery of scoliosis. It is valuable because, first, it furnishes a ready means of obtaining a piece of bone to supplement the Hibbs fusion operation. Most surgeons are not able to do this operation sufficiently well to insure a continuity of bone in all cases. In every case in which the Hibbs operation has been performed, it should be supplemented by either an osteoperiosteal graft from the tibia or, as Dr. Whitman has suggested, a piece of the rib. I am not certain whether the removal of large sections of the convex side of the chest will materially decrease the lung capacity or not. The unfortunate persons who have scoliosis have not any too much lung capacity as a reserve, and it seemed possible to me when I read Dr. Whitman's abstract of his operation that too much harm might be done to the lung capacity. About this, his experience has reassured me. Long ago, Michael Hoke resected practically all the ribs on both sides of the spine in an attempt to remedy a severe scoliosis. I did two of those operations, excising large pieces of eight or nine ribs from each side of the spine. It did no harm to the patients but it did not do them any particular good. I was not able to obtain the same amount of straightening of the spine that Hoke succeeded in obtaining, so I abandoned the operation. Scoliosis is one of the stumbling blocks and disappointments of the orthopedic surgeon. Anything that we can do to prevent the increase of deformity and to obviate the need of wearing apparatus for many years should be fostered. I do not think that we should stand in the way of the experiments on the surgical correction of this deformity. The fusion operation for portions of the spine is one of the greatest advances in the treatment of scoliosis. I am enthusiastically in favor of the performance of fusion operations in all cases of scoliosis in which the condition warrants it—when the scoliosis is due to infantile paralysis—and I am quite prepared to justify the operation in cases of postural scoliosis, even in those in which a moderate increase is not only probable but is seen too often in spite of the best forms of orthopedic, nonoperative treatment which most of us are capable of employing.

DR. WILLIS C. CAMPBELL, Memphis: With the advancement that has been made in the treatment of scoliosis, we can promise patients a serviceable spine and one in which the external appearance is good, if treatment is instituted before extreme structural changes occur. I am glad to say that we do not see so many late cases. Patients are usually brought in early, so that correction can be made. The operation which Dr. Whitman has described I employed in two cases a number of years ago. It is a formidable procedure. In one of these cases, about 6 inches of one rib was removed. Improvement was indefinite. Of course, one cannot be enthusiastic about the improvement obtained in these cases. It is not great. In this particular case, I thought that the increase in chest expansion had improved; it certainly did not diminish, although Dr. Ryerson suggested such a possibility. These operations should be done only in selected cases, and very seldom. When the danger of the operation is explained to patients, few will submit. In one of my cases, I had the misfortune of penetrating into the chest. The lung expanded instead of contracting. This opening into the chest was closed without any complication; the patient's recovery was uneventful, except that some fluid persisted in the chest for several weeks. In my cases, I did not use any postoperative traction and suspension, as Dr. Whitman did, since these patients were treated before such measures were being employed as a routine.

DR. ARMITAGE WHITMAN, New York: In reply to Dr. Orr's question, I have used a vertical incision and have thus far had no complications from interference with the circulation or from pressure. I think that his suggestion of a curved incision might be very useful. I have not taken any readings with the spirometer in regard to the chest capacity before and after the resection of ribs. All I can go by are the clinical data. The patients look much better, they feel much better, their coloring improves, and they tell me afterward that they do not get out of breath so easily. This operation is not universal. In a former discussion I heard the word "promiscuous" used in regard to the treatment of scoliosis. I am opposed to promiscuity in any form. We should be careful to select our cases and to vary our methods according to the indications. I saw rather an interesting case some time ago in a psychiatric clinic. The boy was almost completely paralyzed; he could barely drag himself around on crutches, but in spite of that he had succeeded in going through college. He went through the law school, and he did brilliant work. Everywhere he went, he was attended by a man who had to help him dress, give him his crutches and start him off. Yet in spite of all this, he had done fairly well until the time came for him to get a position in a law office, and then he failed. He had no resources except those gained by his own efforts, and, as they expressed it in the psychiatric clinic, the patient had to "lie down." I was obliged to say that, as far as I could see, the most sensible thing the man had done since he arrived at the center was to lie down, because he wore a laced plaster corset which came far up under the axilla and, in order to hold his back at all, compressed his chest so that he could not breathe. The only time that he was comfortable was when he had the corset off and was lying prostrate on the bed. This is the type of case in which it is justifiable to undertake any such severe operative procedure as that which I have described.

PYELONEPHRITIS AND ITS RELATION TO NONGONORRHEAL URETHRITIS *

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According to most textbooks on urology, infections of the urethra are considered somewhat as follows:

A. Gonorrheal.
B. Nongonorrheal.

The nongonorrheal infection is caused by:

(*a*) Bacteria other than the gonococcus.
(*b*) Chemical irritants.
(*c*) Mechanical irritants.

Nongonorrheal urethritis is caused by bacteria conveyed to the urethra from without in or from within out. Simple nongonorrheal urethritis caused by chemical or mechanical irritants is transitory and disappears as soon as the cause is removed.

In view of the large number of exposures to nongonorrheal organisms to which the average urethra is subjected, infections from without in should be more common than from within out but they are not, because the urethra is more vulnerable to this class of infection and, in addition, the passage of the urine along the urethra has a tendency to wash the infection away.

Examination of the literature for the past ten years reveals little of importance with regard to the etiology of nongonorrheal urethritis, except those infections that are secondary to stricture of the urethra and infections of Littré's glands, the prostate and the seminal vesicles. However, a few writers have called attention to the fact that there is a form of nongonorrheal urethritis which is often of long duration and very difficult to eradicate.

* Read before the Section on Urology at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 19, 1927.

Spittel [1] says, "Bacterial urethritis, especially when secondary, may sometimes be more difficult to cure than gonorrhea itself."

According to Tièche,[2] these urethritides usually have a longer incubation period than gonorrheal urethritis, are less acute, and usually show less cloudiness in the first urine passed. Furthermore, the bacteriologic observations are not constant. They are very persistent, however, and the prognosis is not favorable to the known methods of treatment, many of the local measures being harmful if continued.

Hellström [3] does not deal with the question of a pyelitis traveling downward and setting up a urethritis, but states that "cystitis is a frequent complication." If cystitis is present, one would often expect a urethritis also.

Edel [4] divides the nongonorrheal urethritides into five different groups, in two of which he speaks of "the condition persisting for months or years." His

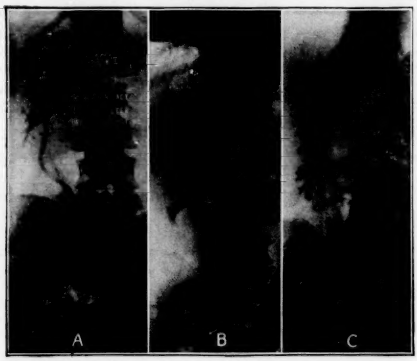

Fig. 1.—*A*, case 4: right rotated kidney; dilated ureter; ureteral stricture. *B*, case 5: right ptosis; ureteral kink; ureteral stricture. *C*, case 6: right ptosis; ureteral kink; dilated ureter; ureteral stricture.

conclusion is that "if the symptoms do not disappear within a month, the chances for recovery are very doubtful."

Runeberg,[5] discussing hematogenous nephritis and pyelonephritis, says that "the cystoscope often showed cystitis, but this was invariably combined with urethritis and pyelonephritis." Hence, Runeberg's conclusion is that all these cases of spontaneous, acute diseases of the urinary tract are due to hematogenous infection of the kidneys, which he regards as the main portal of exit for germs circulating in the blood.

Hunner,[6] in 1911, writing on chronic urethritis and chronic ureteritis as a result of tonsillar infection, is unquestionably the first to call our attention to this class of cases in the female.

1. Spittel, R. L.: Nongonococcal Urethritis, Practitioner **107**: 406 (Dec.) 1921.
2. Tièche, M.: Ueber Harnröhren Katarrhe nicht gonorrhoischer Natur des Mannes und deren Behandlung mit Akatinol, Schweiz. med. Wchnschr. **51**: 84 (Jan. 27) 1921.
3. Hellström, J.: Beitrag zur Kenntnis d. Staphylokokken-pyelitis besonders in ihrer chronischen Form und ueber eine bei derselben vorkommende eigen artige Konkrementbildung, Acta chir. Scandinav. supplement 6, pp. 1-280, 1924.
4. Edel, K.: Over Niet-Gonorrhoische Urethritis, Nederlandsch. Tijdschr. v. Geneesk. **1**: 452 (Feb. 2) 1924.
5. Runeberg, B.: Hematogenous Nephritis and Pyelonephritis, Deutsch. Ztschr. f. Chir. **173**: 1, 1922.
6. Hunner, G. L.: Chronic Urethritis and Chronic Ureteritis Caused by Tonsillitis, J. A. M. A. **56**: 937-941 (April 1) 1911.

Under the title of Intractable Bladder Symptoms Due to Ureteritis in 1920, he [7] reviewed the subject again.

During the past five years I have found that many of these patients have a urethral discharge because of focal infection together with upper urinary tract infec-

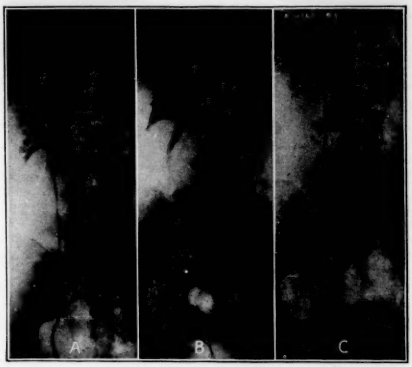

Fig. 2.—*A*, case 13: right beginning hydronephrosis; beginning dilatation of ureter; ureteral stricture. *B*, case 14: right rotated kidney; multiple strictures. *C*, case 15: right hydronephrosis; dilated ureter; ureteral stricture.

tion, a source, I believe, that is little thought of except in early tuberculosis of the kidney.

Some of the cases herein reported have been treated by myself and other urologists, in some instances for a period of years, with relatively no improvement. If there has been a history of previous gonorrheal infection, the patient has been examined for stricture and

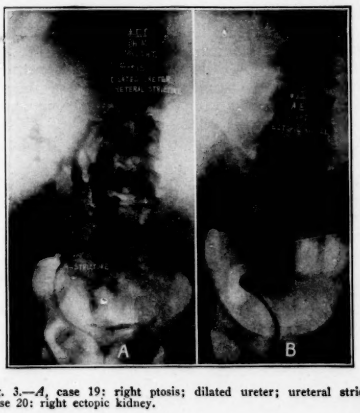

Fig. 3.—*A*, case 19: right ptosis; dilated ureter; ureteral stricture. *B*, case 20: right ectopic kidney.

frequently sounds have been passed to the limit of tolerance. If, by chance, some pus has been expressed from the prostate, he has been massaged diligently. Often the seminal vesicle is included in the endeavor to stop

7. Hunner, G. L.: Intractable Bladder Symptoms Due to Ureteritis, J. Urology **4**: 503 (Dec.) 1920.

the urethral discharge, each urologist indulging in his own pet hobby.

As it is only by experience that we learn, I confess that I have treated many cases of nongonorrheal urethritis as urethritis per se with poor results, because I was focusing my attention too often on Littré's

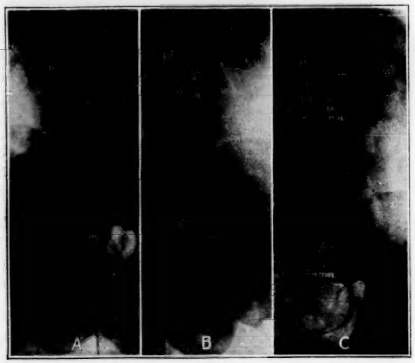

Fig. 4.—*A*, case 16: right dilated ureter; ureteral stricture. *B*, case 17: left beginning dilatation of ureter; ureteral stricture. *C*, case 18: left slight ptosis; ureteral kink; dilated ureter; ureteral stricture.

glands, stricture of the urethra and infection of the prostate and seminal vesicles.

The results of divided urine cultures (first and second glass) first attracted my attention to the possibility that the upper urinary tract, with the addition of focal infection, was frequently the source of a nongonorrheal urethritis. As a result, whenever positive cultures were obtained in the second urine, regardless of the absence of other symptoms, complete investigations of the upper urinary tract were made, together with a careful search for focal infection.

Study of the cases herein reported demonstrates, I believe, that focal infections, plus stasis of the upper urinary tract, often produce no other symptoms of which the patient is aware except a urethral discharge.

It is possible that the irritating effect of alcoholic beverages may enhance this condition.

While a urethral discharge was the only objective symptom that caused this group of patients to seek relief, a careful history often revealed the fact that they tired easily and had no power of endurance, and that they were often irritable and depressed. There was often an associated gastro-intestinal disturbance. In many cases there was loss of sexual power. A dull frontal headache, with a lack of power of concentration, was frequently noticed. The patient had to "drive himself" in order to accomplish anything. These subjective symptoms, we believe, are due to a faulty metabolism, the result of urinary stasis. Costovertebral tenderness and pain in the lower abdomen were frequently present on palpation.

I believe that a positive urine culture, obtained in the second portion of urine voided, is a positive indication for upper urinary tract investigation.

Notwithstanding the fact that in several instances divided urines were too dilute to obtain positive cultures, demonstrable pathologic change was present in the urinary tract. Bugbee[8] says, "Oftentimes the kidney specimen obtained is too dilute and too small in quantity to give a positive culture."

If the pyelo-ureterograms show the presence of gross pathologic changes in the urinary tract, major urologic surgery is indicated. If the obstruction is due to stricture, manipulative urologic procedures are indicated to establish adequate urinary drainage.

URETERAL STRICTURE

As ureteral stricture is an acknowledged clinical entity, it is not surprising that in our enthusiasm and haste to improve urinary drainage with the ureteral bougie, untold injury is often produced by its indiscriminate and careless use. It has been our custom whenever stricture was demonstrated by the pyelo-ureterogram to begin the dilation with a number 3, 4, 5 or 6 F. bougie, well lubricated with liquid petrolatum. In two weeks the procedure is repeated, a bougie one size larger than that which was originally used being passed through the affected ureter. The dilation is continued every two weeks, the size used at the last dilation always being repeated, and increased one size at a time until the desired size is reached. We believe that the procedure of rapid divulsion of the ureter should be condemned as it only traumatizes the ureter and may result in additional scar formation later.

Since strictures of the ureter vary in their consistency, as do strictures of the urethra, the amount of dilation needed in a given case will vary. "Each is a law unto itself." In soft strictures we have been carrying the dilation to the number 12 F., then repeating in two weeks, and after that doubling the time on each succeeding visit. In some instances, however, in order to obtain lasting relief we have carried the dilation to number 14 F.

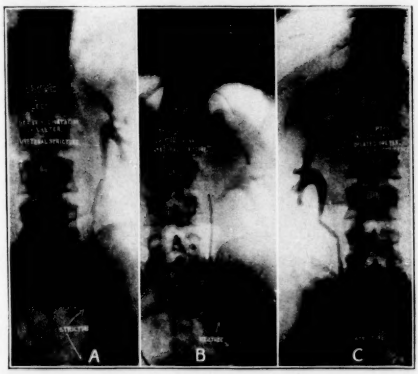

Fig. 5.—*A*, case 7: left beginning dilatation of ureter. *B*, case 8: left ptosis; ureteral kink; ureteral stricture. *C*, case 9: right slight ptosis; ureteral kink; dilated ureter; ureteral stricture.

When ureteral dilation is carried out in the office I have found that the insertion of a rectal suppository of extract of opium and extract of belladonna, of each one-fourth grain (16 mg.), one hour before examination, together with the local application to the urethra of sodium bicarbonate and cocaine, of each 1.5 per cent,

8. Bugbee, H. G.: Pyelitis in Infants, New York State J. Med. **25**: 1063 (Dec. 1) 1925.

as recommended by Gardner,[9] will produce an ideal preparation for cystoscopy. If the patient is encouraged to drink freely of water for several hours before examination, cystoscopy can be done in his own urine, a procedure that not only shortens the manipulation but lessens the possibility of carrying infection into the bladder.

The twenty cases herein reported are only half of the group that has come under observation during the last three years presenting a chronic urethral discharge, with upper urinary tract infection. A large percentage of the cases showed bilateral ureteral obstruction. However, owing to lack of space, pyelo-ureterograms are reported on one side only.

Summary of Cases

No.	Name	Reasons for Consultation	Other Symptoms	Culture	Focal Infection	Pyelographic Diagnosis
1	H. T.	Chronic urethral discharge; treated for gonorrhea	Frequency, urgency, pain in left abdomen	Staphylococci	Teeth and tonsils	Right: rotated kidney; ureteral kink; dilated ureter; ureteral stricture
2	I. B.	Chronic urethral discharge; treated for gonorrhea	Frequency, pain on urination, lassitude	Colon bacilli	Teeth and tonsils	Right: hydronephrosis; dilated ureter; ureteral stricture
3	J. K.	Chronic urethral discharge	Lassitude.....	Colon bacilli	Teeth	Right: rotated kidney; ureteral kink; dilated ureter; ureteral stricture
4	A. V.	Chronic urethral discharge; treated for gonorrhea	Lassitude.....	Colon bacilli	Teeth and tonsils	Right: rotated kidney; dilated ureter; ureteral stricture
5	E. H.	Chronic urethral discharge; treated for gonorrhea	Lassitude and pain in back	Colon bacilli	Teeth	Right: ptosis; ureteral kink; ureteral stricture
6	A. F.	Chronic urethral discharge; treated by author for ten years	Lassitude and lumbar pain after exercise	Negative	Negative	Right: ptosis; ureteral kink; dilated ureter; ureteral stricture
7	E. D.	Chronic urethral discharge	Lassitude.....	Negative	Teeth and tonsils	Left: beginning dilatation of ureter; ureteral stricture
8	M. N.	Chronic urethral discharge	Lassitude, pain in left lumbar region, joints stiff	Staphylococci	Teeth bad	Left: ptosis; ureteral kink; ureteral stricture
9	E. B.	Chronic urethral discharge	Lassitude; operated on for appendicitis and treated for ulcer of duodenum	Negative	Teeth	Right: slight ptosis; ureteral kink; dilated ureter; ureteral stricture
10	E. P.	Chronic urethral discharge	Lassitude.....	Staphylococci	Teeth and tonsils	Right: ptosis; ureteral kink; dilated ureter; ureteral stricture
11	H. G.	Chronic urethral discharge	None.....	Staphylococci	Teeth	Left: ptosis; dilated ureter; ureteral stricture
12	I. E.	Chronic urethral discharge; nongonorrheal epididymitis	Lassitude, bilateral lumbar pain	Staphylococci	Teeth bad	Right: ureteral kink; dilated ureter; ureteral stricture
13	J. G.	Treated by author for chronic urethral discharge for two years	Lassitude, bilateral lumbar pain	Negative	Teeth	Right: beginning hydronephrosis; beginning dilatation of ureter; ureteral stricture
14	D. S.	Chronic urinary infection; treated five years for prostatic infection	Lassitude, bilateral lumbar pain	Staphylococci and colon bacilli	Teeth	Right: rotated kidney; multiple strictures
15	C. R.	Treated for gonorrhea	Lassitude, right lumbar pain	Streptococci	Tonsils	Right: hydronephrosis; dilated ureter; ureteral stricture
16	J. K.	Chronic urethral discharge	Lassitude.....	Negative	Teeth	Right: dilated ureter; ureteral stricture
17	W. G.	Chronic urethral discharge	Lassitude, lumbar pain	Negative	Teeth	Left: beginning dilatation of ureter; ureteral stricture
18	J. L.	Treated by author for chronic urethral discharge for thirteen months	None.....	Negative	Teeth	Left: slight ptosis; ureteral kink; beginning dilatation of ureter; ureteral stricture
19	H. M.	Referred to author for chronic gonorrheal infection	Lassitude.....	Colon bacilli	Negative	Right: ptosis; dilated ureter; ureteral stricture
20	A. E.	Chronic urethral discharge for ten years	Feels good but tires easily; hypospadias	Staphylococci; streptococci	Negative	Right: ectopic kidney

When ureteral stricture was present, the diagnosis was made by the pyelo-ureterogram and not by means of the diagnostic bulb.

FOCAL INFECTION

I believe that there is still too little attention paid to the rôle that focal infection plays in the production of chronic urinary infection.

The mere fact that adequate drainage is established is not enough. Furthermore, it is useless unless the primary source of the trouble has been eradicated.

As all upper urinary tract infections are severe afflictions which may ultimately totally incapacitate the patient, careful search should be made for focal infection and its source removed as soon as possible.

I am in accord with the fact as stated by Bumpus and Meisser[10] that devitalized teeth without definite bone changes, and apparently normal tonsils, can produce focal infection.

I have found that if all foci of infection are removed before dilation is begun, the subsequent dilation will be accompanied by less local and general reaction.

CONCLUSIONS

1. From the evidence here presented it appears that many cases of nongonorrheal urethritis of bacterial origin occur as a result of infections carried from within out and not from without in.

2. As the outcome of divided urine cultures and pyelographic studies, it is shown that pyelonephritis as a result of focal infection, with poor kidney drainage, is often the cause of persistent nongonorrheal urethritis.

3. Treatment should include removal of focal infections and the establishment of adequate kidney drainage.

30 North Michigan Avenue.

9. Gardner, J. A.: Personal communication to the author.
10. Bumpus, H. C., and Meisser, J. G.: Foci of Infection in Cases of Pyelonephritis, J. A. M. A. **77**: 1475-1478 (Nov. 5) 1921.

Physician and Health Work.—The doctor of medicine, while dealing with an art which may be criticized by mathematicians as inexact, nevertheless has devoted much of the time of his training period to fundamental natural sciences and is accustomed to think in terms of biology, chemistry and physics. He is also, next to the priest, the man of all men who comes most intimately into the confidence of the people. Unfortunately, for the present purpose, he has been trained to think more about disease than about health; but there is no more adaptable person in all the world than the physician, and if he can be persuaded of its desirability he can soon learn to enlarge his point of view.—Draper, W. F. *Pub. Health Rep.* **42**:2243 (Sept. 9) 1927.

RENAL DISTORTION

ITS RELATION TO NEPHRALGIA *

G. W. BELCHER, M.D.
CLEVELAND

Pyelography has become quite an important procedure in determining the cause of vague aches and pains in the flank and in the region of the kidney. If, when the pyelogram is being made, the pain is reproduced by distention of the renal pelvis or ureter, and if then the pyelogram shows the pelvis to be abnormal in any respect, the kidney may be regarded as a possible factor in the production of the pain.

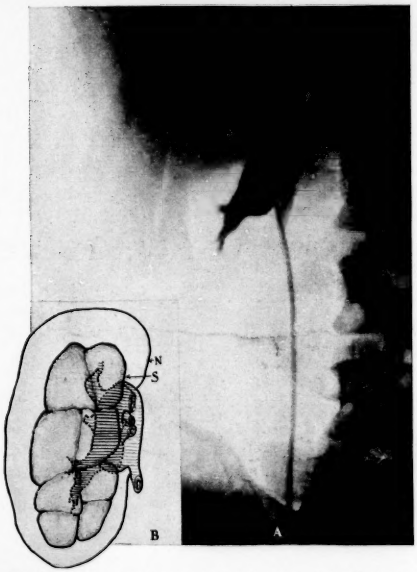

Fig. 1 (case 1).—*A*, pyelogram of right kidney showing distortion and atrophy, in a case of nephralgia. *B*, schematic drawing illustrating observations at operation. The outlines *N* and *S*, respectively, represent the relative sizes of the normal kidney and the specimen.

Furthermore, one is especially prone to suspect that the kidney is causing the trouble if it is atrophic. Final decision as to the course of treatment to be undertaken in such cases should be made only after the most careful examination and lengthy observation. This pertains particularly to patients in whom kidneys have been previously explored, incised or "tacked up."

Our attention has been directed recently to certain cases in which one finds an atrophic distorted kidney, which may or may not have been operated on, is not infected, and is presumably the source of the patient's pain. There have been three such cases, which I report in detail.

* From the Cleveland Clinic.

* Read before the Section on Urology at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 19, 1927.

REPORT OF CASES

CASE 1.—A married white man, aged 40, whose family, personal and marital history did not present anything of importance, complained of severe pain of a burning nature which had been present for the past eight years in the region of the right kidney. This pain occasionally became acute and was then transmitted to the right testis. For a number of years he had had frequency and a little burning on urination. The burning had stopped about two years before; but the patient was still troubled with frequency. Seven years before we first saw him appendectomy had been performed as a possible means of relief; and later the right ureter had been dilated, but the pain had not been relieved. About one year before he came to the clinic the right kidney region had been explored and a right nephrotomy had been performed, but no improvement had followed.

The patient was fairly well developed but poorly nourished. He did not appear to be suffering from acute pain, but deep palpation elicited tenderness in the region of the right kidney. The blood pressure was 126 systolic and 90 diastolic. The specimen of voided urine was normal and the Wassermann, Kahn and blood sugar tests gave normal results.

A stereoscopic roentgen-ray examination of the urinary tract showed the right kidney to be only about three fifths as large as a normal kidney, while the left kidney was at least twice the size of the right.

Cystoscopic examination showed the bladder to be normal. No obstruction was encountered when the ureters were catheterized, and specimens from the kidneys did not show evidence of infection. In the differential function test the right kidney secreted only 3 per cent, while the left kidney secreted 30 per cent of the dye, during the first fifteen minutes after its appearance.

A pyelogram of the left kidney showed a large normal pelvis, while a pyelogram of the right kidney showed distortion and atrophy (fig. 1). The pain of which the patient complained was reproduced by distending the pelvis of the right kidney. The pyelogram made with the patient in the upright position did not give any evidence of nephroptosis.

A right lumbar incision disclosed an atrophic, distorted kidney surrounded by a great mass of scar tissue. A sympathectomy could not be performed, as it was found impossible to isolate the nerves in the scar involving the pedicle, and therefore an intracapsular nephrectomy was performed. The postoperative course was uneventful. The kidney weighed 90 Gm. and measured 10 by 6 by 3.5 cm. Except for distortion, fetal lobulations, atrophy, and strands of fibrous tissue which were adherent to the surface, there were no gross pathologic changes. The scar of the previous nephrotomy extended from pole to pole and was well healed. Microscopic examination revealed the glomeruli normally lobulated and uniform in size. Bowman's capsules did not show fibrosis. The tubules were normal. The blood vessels were normal. The site of an old nephrotomy showed a dense fibrous scar without leukocytic reaction. The renal capsule was absent.

The patient has been seen several times since the nephrectomy was performed, the last time four months after the operation, and he reports that the pain has not been completely relieved. He still has persistent pain, which may, in part at least, be due to faulty posture or hypertrophic arthritis.

CASE 2.—The patient was a married white woman, aged 44, whose mother had died of cancer of the uterus at the age of 48. There was nothing else of importance in the family history. Hemorrhoidectomy had been performed in 1907; ulcers of the rectum had been "burned out" in 1908; right oophorectomy had been performed in 1909, and suspension of the left kidney in 1924.

The patient's chief complaint was of pain in the left side and kidney. She had always had comparatively good health until about a year before she presented herself at the clinic. At that time she had suffered a severe jolt while riding in an automobile. That night she had had "pains all over," but particularly in the back. The pain had become worse the second night and had then disappeared. There had been no bladder disturbance or blood in the urine at any time. About three or

four weeks after the accident she had begun to have pain in the left side. Her physician had found that she had an "enlarged spleen" and had "got the spleen down" by medicine taken by mouth. The pain then settled in the left kidney and a cystoscopic examination was made and pyelograms were taken. The left kidney was shown to be "twisted, ptosed and dilated," and an operation was performed at which the capsule was "split and tacked in place." Six weeks later the pain recurred, but the patient had not been examined again until her visit to the clinic. At this time she complained of more or less constant pain in the left kidney region, so severe at times that she had to take "large doses of morphine" for it. There was slight frequency of urination but no dysuria, hematuria, difficulty in urination, or chills and fever. The patient had lost 25 pounds (11 Kg.) during the preceding eight months. She had occasionally had headaches when the pain in the kidney was severe. Her feet had been slightly swollen. There had been no menstruation for one year. The patient was very nervous. There were no disturbances of vision.

The patient was well developed and well nourished. Her color was good and the sensorium clear. There was a healed left lumbar incision. The left kidney region was exquisitely tender to deep palpation. The kidney was not felt. A pelvic examination did not reveal anything abnormal. There was no edema of the extremities. The reflexes were normal. The temperature was 97.8; pulse, 84; blood pressure 153 systolic and 103 diastolic. The Wassermann, Kahn, and blood urea tests gave normal results. A specimen of voided urine was acid; the specific gravity was 1.0222; albumin, 0; sugar, 0. Microscopic examination showed an occasional pus cell. The catheterized bladder specimen did not show evidence of infection.

A roentgen-ray examination of the urinary tract disclosed a slightly ptosed, somewhat atrophic left kidney. The upper pole was rotated medially and the lower pole laterally.

Cystoscopy did not reveal abnormal conditions; there was no ureteral obstruction, pelvic retention or infection of the kidney. A pyelogram was made of the left kidney. (fig. 2), in the process of which the pain of which the patient complained was reproduced.

Operation was performed, a longitudinal incision being made over the abdomen, extending from just below the costal margin on the left to the level of the anterior superior spine of the ileum. The muscles were divided and the perirenal space was exposed. The kidney was found to be buried in adhesions, tilted as shown in the roentgenogram, and firmly attached to the posterior surface of the peritoneum. It was freed by blunt dissection with great difficulty and was found to be very small and greatly distorted. This finding, together with the history of severe pain and of unsuccessful nephropexy, was considered a sufficient indication for nephrectomy. An intracapsular nephrectomy was performed and the patient made an uneventful recovery.

Pathologic examination revealed the left kidney definitely smaller than normal. The capsule seemed thickened. The amount of fibrous tissue in the peripelvic portion of the medulla was slightly increased; otherwise there was nothing worthy of note. Microscopic examination revealed the lobulations of the glomeruli normal. The capsules were not fibrosed. The tubules were normal. The blood vessels showed marked thickening of the walls (media) with encroachment on the lumen. The renal capsule was absent. The diagnosis was mild arteriosclerosis, involving the arterioles only.

A year and a half after the operation the patient still suffered from the pain of which she had complained and had symptoms that would lead one to suspect a chronic nephritis.

CASE 3.—A married white woman, aged 24, whose family and marital histories were not important, had irregular menses, occurring every five or six weeks, with a scanty flow but no unusual pain. The patient had had jaundice in childhood but no other diseases. She had had good health until three years before we first saw her. At that time she had begun to lose weight and appetite but had had no cough, perspiration or fever. One year later she had had a very sudden attack of extremely severe pain in the right side of the back, in the lumbar region, in the right side of the abdomen, and radiating down into the bladder and into the right leg as far as the knee. The appendix was removed but without any resultant relief from the pain. Since this first attack the pain had been almost constant. It was usually mild, but at times it was quite severe and colic-like. The distribution of the pain was the same as in the initial attack. The patient had had frequency of urination both by day and by night since the onset of her trouble. There had been no hematuria or gravel, but pus had been found in the urine. A roentgen-ray examination made one and a half years before she came to the clinic had not shown any stones in the kidneys. The patient had lost 20 pounds (9 Kg.) during the preceding two years. She felt ill and said that she had a rise in temperature every afternoon. During severe attacks the temperature ranged between 102 and 103 F. She had had a moderate degree of constipation for the preceding two years but no indigestion, headache or dizziness.

The patient was thin. She was 5 feet 5 inches (165 cm.) in height and she weighed 98 pounds (44.5 Kg.). A small colloid

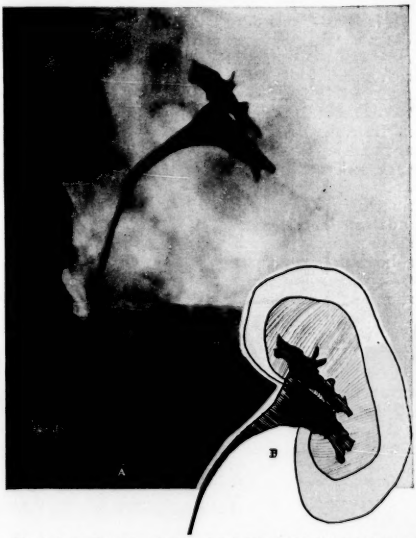

Fig. 2 (case 2).—*A*, pyelogram of left kidney showing distortion and atrophy, in a case of nephralgia. *B*, schematic drawing illustrating observations at operation.

goiter was noted. There was some dulness in the apexes of the lungs. The action of the heart was rapid but otherwise normal. The whole right side of the abdomen was tender. There was muscular resistance to deep palpation in the right kidney region, and an indistinct mass was felt there. An area just below the umbilicus on the right side was particularly tender. The afternoon temperature was 98.6 F.; pulse, 100; blood pressure 115 systolic and 75 diastolic. The Wassermann test, blood sugar examination, blood counts and urinalyses were normal.

Cystoscopy and ureteral catheterization did not reveal anything abnormal except a trigonitis. A pyelogram of the right kidney showed a dystopic duplex kidney, which was also distorted (fig. 3). Distention of this kidney pelvis reproduced the pain of which the patient complained.

Local treatment of the bladder did not give any relief, so an exploratory operation was performed. A right lumbar incision (Mayo) was made, the line of incision being carried well forward. Exploration of the abdomen did not reveal anything abnormal in the stomach, gallbladder or intestines. A large Riedel lobe of the liver was found, which

pressed on a small retroperitoneal mass at the brim of the pelvis. This was found to be the right kidney, which was atrophic, duplex, dystopic and distorted. There was no thickening of the capsule or perirenal sclerosis; therefore it was thought that no benefit would result from decapsulation. The Riedel lobe of the liver and the short renal pedicle with its anomalous arrangement made a nephropexy impossible. In view of these conditions, the atrophy of the kidney, and the severe subjective symptoms, it was felt that nephrectomy was the only advisable procedure, and this was performed, the renal capsule being removed with the kidney.

Pathologic examination revealed the kidney about half the normal size. Except for the distortion of the upper half and the anomalous formation, it was normal. Microscopic examination did not reveal anything abnormal.

Four years after the operation was performed the patient reported that her pain had been entirely relieved and had not recurred.

COMMENT

Definition.—Renal distortion is a diagnosis which is ordinarily made by means of pyelography. A distorted kidney is one in which a part or the whole of the pelvis is twisted, tilted or bent in any direction from the usual normal position. It is often found accidentally, as it usually causes slight or no symptoms. When this condition is associated with pronounced nephralgia, however, and the pain is reproduced by the distortion of the renal pelvis when the pelogram is taken, then, unless some other pathologic condition in the urinary tract is present, the distortion of the kidney becomes a matter of primary importance.

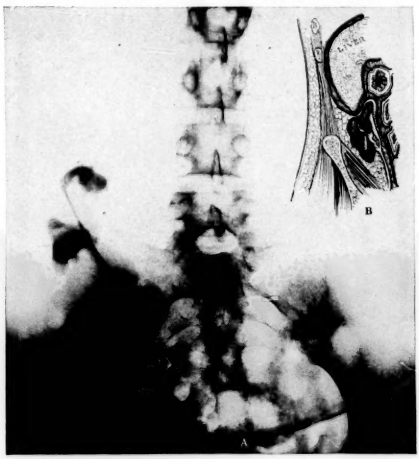

Fig. 3 (case 3).—*A*, pyelogram of right kidney showing distortion, dystopia and atrophy. *B*, schematic drawing illustrating observations at operation.

Etiology.—Renal distortion seems, as a rule, to be due to one of the following causes: 1. A congenital anomalous development with preservation of the embryologic anterior position of the renal pelvis, such as is seen in cases of horse-shoe kidney. 2. Pressure exerted on the kidney by neighboring viscera, by a tumor, by some congenital anomaly, or as the result of visceroptosis. 3. Postoperative cicatrization following perirenal or intrarenal operations. 4. Perirenal inflammation.

Symptoms.—Renal distortion usually does not cause any symptoms and, as stated, the condition may be discovered by chance when pyelography is employed for some other reason. In some cases, however, it causes more or less pain in the kidney region. This pain may be intermittent and may be induced by posture, by beginning hydronephrosis, or by encroachment of the neighboring viscera, as in case 3. In kidneys which have been previously incised, infundibular stricture may cause colic and a hydrocalix may form. If the kidney becomes infected, the symptoms of pyelitis and cystitis will, of course, be present. I believe that a congenital malposition of a kidney frequently causes pain in the back even when there are no complications, as does Herman;[1] and this may also be true of dystopia or distortion which is not congenital. This conclusion is not borne out, however, by the results of the treatment in cases 1 and 2.

The history of symptoms may indicate that the patient has had a perinephritic abscess. If operations have been performed, their nature and their effect on the pain should be carefully noted. The question as to whether or not the patient is relieved by lying down, in other words, whether or not much ptosis is present, is very important. The effect of previous ureteral dilation or catheterization should be determined, since improvement following such procedures should at once suggest that ureteral stricture rather than distortion is the cause of the pain.

Diagnosis.—There are three questions of primary importance in the study of every case of renal distortion accompanied by nephralgia:

1. Does the cause of the nephralgia lie outside or inside the urinary tract?
2. Is the distortion simple or complicated by other factors?
3. Is the distortion primary or secondary to conditions in the surrounding viscera?

In considering the first question it must be remembered that any infection or obstruction of the lower urinary tract may cause pain in the kidney, and also that nephralgia accompanies many conditions, not only local conditions of the genito-urinary tract, such as nephritis, hydronephrosis, pyelonephritis, pyelitis, stricture of the ureter, trigonitis, prostatitis, seminal vesiculitis and urethral stricture, but also diseases outside the genito-urinary tract, such as syphilis, spinal arthritis, neuritis, Pott's disease, pleurisy, or pelvic inflammatory disease. Therefore, in order first of all to rule out the general pathologic conditions which may cause the pain, a very careful general physical examination should be made, this examination including a Wassermann test, a blood urea and a blood sugar test and, in any suggestive case, a spinal fluid examination. A thorough examination of the genito-urinary tract should next be made and every possibility of the presence of any disease below the kidney ruled out, to establish the fact that the pain is renal in origin. If no cause has been found for the pain, either outside the genito-urinary tract or within it, and distention of the renal pelvis reproduces the pain, then a pyelographic study is indicated.

Although a pyelogram always shows clearly whether or not distortion is present, nevertheless pyelograms of both kidneys should be taken so that one may be

1. Herman, L.: Renal Anomalogy, S. Clinics N. Amer. **4**: 265-288 (Feb.) 1924.

sure he is not dealing with a horseshoe kidney or with a bilateral congenital anomaly. If the two kidneys are equally distorted there is less likelihood that the distortion itself is a factor in the cause of the pain. Nephroptosis is excluded by making a pyelogram with the patient in the upright position. The possibility that ureteral stricture may be associated with distortion must always be considered and ruled out, especially in cases in which hydronephrosis is present. However, the hydronephrosis may be the result of a previous disease, such as pyelitis, renal calculus, or some other condition which is no longer present.

In determining whether or not the distortion is secondary to some extrarenal condition, the possibility that visceroptosis may be present is first considered, this being decided by a gastro-intestinal roentgenogram taken after a barium meal. Inflammatory or malignant processes in the spine, chest, liver or retroperitoneal region may displace and rotate the kidney. These conditions are usually found by plain stereoscopic roentgenograms. Occasionally a congenital anomaly, such as the Riedel liver lobe in case 3, may cause distortion.

decapsulation and section of the nerves of the pedicle may be tried. If the distorted kidney is quite atrophic and shows marked perirenal sclerosis, and if the other kidney shows a high degree of compensatory hypertrophy, nephrectomy is the only practicable treatment. The renal capsule should also be removed as, according to Stöhr,[3] it contains a rich network of nerves which may possibly be afferent carriers of pain stimuli. White and Martin[4] feel that the only practicable operation which has so far been discovered for the relief of symptoms due to the congenital fixation of a kidney in a faulty position is nephrectomy, but I do not entirely agree with this opinion. If such a kidney is markedly atrophic or is pressed on by a heavy viscus, and the patient is of the visceroptotic type (case 3), nephrectomy may be indicated. It seems, however, in view of Papin's[5] report of good end-results in four out of six cases in which he performed a section of the nerves of the pedicle to relieve the pain of small hydronephroses, that, if the kidney is of a fairly normal size, such a procedure should be tried before the kidney is sacrificed.

Summary of Cases

	Distortion	Atrophy	Perirenal Sclerosis	Previous Operations for Relief of Condition	Symptoms	Congenital Anomaly of Kidney	General Condition	Hypertension	Treatment	Result
Case 1	Present	Three fifths the normal size	Marked	Nephrotomy	Severe pain in kidney region	Fetal lobulations	Fair	None	Intracapsular nephrectomy	Relieved for two months; now has pain in kidney region but not so severe
Case 2	Upper pole turned medially, lower pole laterally	Somewhat smaller than normal	Marked	Nephropexy with decapsulation	Severe pain in left side	None	Good	Slight	Intracapsular nephrectomy	No pain for one month; now has pain in kidney region
Case 3	Present	Half the normal size	None	Appendectomy	Severe pain in right side of back, right side of abdomen, bladder and right leg	Dystopia and bifurcation	Poor	None	Nephrectomy	Renal pain cured

The atrophy which may accompany renal distortion is either a result of operative sclerosis (cases 1 and 2), or is congenital (case 3). The presence of this condition is determined by the differential function test, for while the interval between the administration of the dye and its appearance is often normal, the total output for a given time is subnormal and is usually proportional to the degree of atrophy present. Geraghty[2] has shown that the percentage of urea excreted in cases of atrophy is normal, but the total amount of urea is subnormal.

Treatment.—Abdominal and renal supports should be tried in every case before an operation is undertaken. Also, if there is any suggestion of the presence of nephritis, arthritis or pelvic disease, or if there is a possibility of a ureteral stricture or of disease in the lower urinary tract, treatment appropriate to the suspected condition should be tried first and the effect of this treatment on the nephralgia determined. Only after other measures have failed should a surgical procedure be undertaken.

The type of surgical treatment should be determined by the functional capacity of the distorted kidney, the cause of the distortion, the severity of the symptoms, and the general physique of the patient. If the function of the kidney is normal or not far below normal,

2. Geraghty, J. T., and Plaggemeyer, H. G.: A Consideration of the Importance and the Diagnosis of the Type of Kidney Known as "Infantile," Tr. Am. A. Genito-Urin. Surg. **8**: 48-70, 1913.

SUMMARY OF CASES

1. In three cases of nephralgia in atrophic, noninfected, distorted kidneys, nephrectomy was performed.

2. In the two cases in which operations on the kidney had previously been performed, nephrotomy and nephropexy, respectively, the patients were not relieved of their pain by intracapsular nephrectomy. In one of these cases symptoms have developed which lead one to suspect that a nephritic condition now exists; in the other the patient's condition has improved but there is still some pain in the kidney region. The cause of this pain has not been definitely determined, but it is thought to be hypertrophic arthritis. The renal distortion which was present in these two cases was probably the result of the previous operations.

3. In the case in which the distortion of the kidney was caused by a ptosed and anomalous liver, the patient was relieved from pain by nephrectomy.

4. It is possible that better results would have been obtained in the first two cases if the capsule had been removed with the kidney, as Stöhr has shown that the capsule contains a rich network of afferent nerves. The fact that in both of these cases the pain disappeared for

3. Stöhr, P.: Ueber die Innervation der menschlichen Nierenkapsel, Ztschr. f. d. ges. Anat. **21**: 313-316, 1924.

4. White, J. W., and Martin, E.: Genito-Urinary Surgery and Venereal Disease, ed. 5, Philadelphia, 1905, p. 529.

5. Papin, E., and Ambard, L.: Resection of the Nerves of the Kidney for Nephralgia and Small Hydronephroses, J. Urology **11**: 337-347 (April) 1924.

from one to two months may possibly be explained by a temporary physiologic or functional blocking of these nerve fibers by the trauma of the operation.

CONCLUSIONS

1. Although distortion of the kidney usually does not cause pain, in some cases nephralgia results from the encroachment of neighboring viscera or from postoperative cicatrization and arteriosclerosis.

2. In determining the cause of nephralgia in any case of renal distortion, one must first ascertain (1) that the cause of the pain is inside and not outside the genito-urinary system, and (2) that it is not due to some condition in the lower portion of the genito-urinary system. If this has been done, and distention of the pelvis of the kidney on the affected side causes the pain of which the patient complains, and if the pyelogram of the affected side shows distortion, while the pyelogram of the other kidney is normal, it seems probable that the origin of the pain is intrarenal. However, if there has been a previous nephrotomy or nephropexy, this must be considered in reading the pyelographic observations.

3. If other disease or disturbing conditions are associated with renal distortion, they should be treated before any surgical operation is undertaken for the relief of the pain. In any event the patient should be under observation for a considerable period, and all other measures, such as abdominal supports, should first be tried.

4. If an operation is performed, decapsulation and section of the nerves of the renal pedicle should be attempted if the function of the kidney is not far from normal. If there is marked atrophy and the symptoms are severe, nephrectomy with removal of the capsule is indicated.

INLYING URETERAL CATHETER IN TREATMENT OF PYELONEPHRITIS AND OTHER RENAL CONDITIONS *

DANIEL N. EISENDRATH, M.D.
CHICAGO

My object in this paper is to make a plea for the more widespread use of a method of treatment which is not as well known as it deserves to be.

In ordinary lavage of the renal pelvis, the ureteral catheter is withdrawn immediately. If, on the other hand, it is left in place for a much longer period (days or weeks) it is spoken of as the inlying catheter method.

Guyon, Albarran and other French urologists, as early as 1906, called attention to the value of such prolonged drainage of the kidney in the treatment of calculous anuria and reported a number of successful cases.

The application of the method to the treatment of nontuberculous renal infections is of comparatively recent origin. Caulk,[1] in 1917, deserves credit for advocating its use in renal retention of varying degrees. A little later Bumpus [2] reported a number of cases of acute and chronic renal infections in which the inlying ureteral catheter had been employed with most gratifying results.

Aside from the contributions of Caulk and Bumpus, one finds but few references [3] to the use of this method of treatment until the past two years. Even abroad, judging by a recent article by Wagner,[4] the value of the inlying ureteral catheter is but little known.

Although at first recommended for the relief of obstructive anuria and the treatment of nontuberculous renal infections, its field of application has been enlarged to include the following:

1. The relief of anuria of the obstructive type.
2. The treatment of acute and chronic pyelonephritis.
3. The relief of the severe pain incident to acute ureteral block; e. g., by a calculus or by kinking of the ureter in abnormally mobile kidney. Here the use of the inlying ureteral catheter is followed by immediate cessation of the colicky pain, after opiates have failed to give relief.

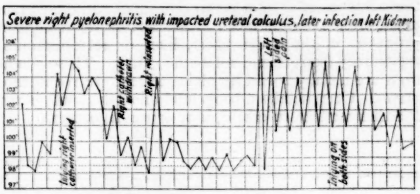
Severe right pyelonephritis with impacted ureteral calculus, later infection left kidney
Right catheter withdrawn
Left catheter withdrawn
Left side catheterized
Left side drained

Chart 1.—Temperature in case 1, in which a severe hematogenous infection of the left kidney occurred about five days after spontaneous expulsion of an impacted calculus in the opposite ureter. The left side infection responded very quickly to an inlying ureteral catheter.

4. In cases of ureteral injury following operations such as hysterectomy for fibroids, or after the Wertheim radical operation for uterine cancer. Here the inlying ureteral catheter acts as a splint and is of especial value when the injury involves only a portion of one wall of the ureter. Wagner [4] recently reported a cure following the use of the inlying ureteral catheter for sixteen days.

5. As a method of drainage of the kidney after repair of a vesicovaginal fistula. Thomas [3] and Magoun [3] have recently employed inlying ureteral catheters for this purpose.

Judging by my own results in cases of anuria of obstructive origin, in the treatment of acute and chronic (nontuberculous) pyelonephritis and in the relief of the prolonged colic due to acute ureteral block (calculus or stricture) I feel that the method has a very wide field of usefulness. The following cases have been selected from a relatively large number treated during the past four years. Case 1 illustrates a most gratifying result in the treatment of acute pyelonephritis involving both kidneys, and case 2 a similar successful outcome in obstructive anuria complicated by severe renal infection of a single kidney. Case 3 has been added to illustrate, first, the inability of the method to conquer a very acute and severe bilateral pyelonephritis when the catheters cannot be kept in place for a prolonged period.

REPORT OF CASES

CASE 1.—*Impacted right sided calculus in juxtavesical portion of ureter complicated by severe pyelonephritis. Relief of pain, also spontaneous expulsion of calculus, after use of inlying catheter (right). Sudden onset of symptoms of left renal infection during convalescence. Rapid recovery after use of inlying catheter on this previously noncatheterized side.*

* From the urological departments of the Michael Reese and Chicago Memorial hospitals.
* Read before the Section on Urology at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 19, 1927.

1. Caulk, J. R.: Ureter Catheter Drainage in the Treatment of Renal Infections, J. A. M. A. **68**: 675 (March 3) 1917.
2. Bumpus, H. C.: Urology **11**: 453 (April) 1920.
3. Thomas, G. J.: Tr. Mayo Clinic Alumni, 1927. Magoun, J. A. H.: J. Urology **17**: 463 (April) 1927.
4. Wagner, G. A.: Arch. f. klin. Chir. **140**: 701, 1926.

A man, aged 45, had had recurrent attacks of right lower quadrant pain radiating to the back and accompanied by fever to 102.6 F. (chart 1). Sudden onset had occurred five days before. There was a shadow opposite the right spine of the ischium. On account of failure to obtain relief with opiates, an effort was made on the seventh day to pass beyond the obstruction in the lowermost portion of the right ureter, but it was unsuccessful because of marked edema of the orifice. An inlying catheter was inserted the following day and left in situ for five days. The temperature dropped from 105.6 F. to almost normal, accompanied by complete relief of pain and disappearance of the shadow. A slight recurrence of the fever subsided after reinsertion of the catheter followed by apparent convalescence for five days.

Chill, fever to 106.4 F., and pain over the left iliocostal space and radiating downward appeared suddenly, Aug. 5, 1926, although the left ureter had never been catheterized. Fever and other evidences of toxinemia became more marked in spite of the introduction of a right inlying catheter.

Cystoscopy revealed both ureteral orifices very edematous; thick, purulent urine escaped after introduction of a ureteral catheter to the left renal pelvis. There was marked improvement in the condition of the urine aspirated from the right side at this time. Inlying catheters were now left in situ on both sides, followed by a rapid fall of temperature, recession of evidences of generalized sepsis, and disappearance of pyuria. Pelvic lavage was not given during the period of bilateral inlying catheter treatment.

The complete block of the right ureter by a calculus was complicated by a severe pyelonephritis. After expulsion of the calculus and drainage of this kidney with the inlying catheter, there was an apparent hematogenous infection of the left kidney, because this side had never been catheterized. The symptoms became so severe that we were afraid of a generalized sepsis. The use of the inlying catheter on the left side was followed by rapid recovery.

CASE 2.—*Nephrectomy (right) for severe pyelonephritis complicating multiple renal calculi. Three weeks later, sudden occlusion of ureter of remaining kidney by shadowless calculus. Relief of anuria and renal infection by use of inlying catheter for five days.*

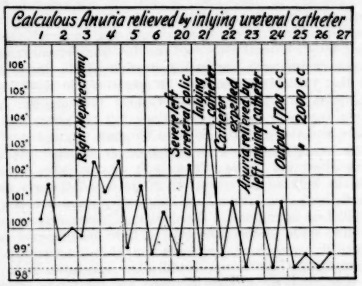

Chart 2.—Temperature in case 2, in which a calculous anuria, accompanied by severe renal infection of the left kidney, occurred three weeks after a right nephrectomy and was relieved by an inlying ureteral catheter.

A man, aged 32, had recurrent attacks of severe pain over the right kidney. There were marked pyuria and decreased function on this side, also two relatively large shadows included in the pyelogram. The latter also revealed considerable dilatation of all calices.

There were no abnormal observations on the left side. Nephrectomy on the right side was done because of fear of recurrence and severe pyelonephritis. During the third week of convalescence there was sudden onset of left ureteral colic followed by anuria.

Although no shadow was to be seen, an obstruction in the juxtavesical portion of the left ureter was encountered; when this was passed, a large amount of urine escaped through the ureteral catheter. Both the anuria and symptoms of severe left renal infection subsided after the use of an inlying catheter for five days. Had this method of treatment not been employed, ureterotomy or pyelotomy would have been imperative within the first forty-eight hours after onset of the calculous (obstructive) anuria. The right kidney, after removal, showed the presence of two small calculi which not only had not yielded a shadow before operation but could scarcely be seen on a film of the kidney specimen after operation.

In this case the interesting features are that two calculi were found in the right kidney, after removal, that were practically shadowless. Three weeks after the right nephrectomy there was a complete block of the left ureter by a calculus which was shadowless but which was encountered with the ureteral catheter. The

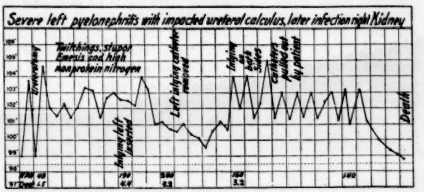

Chart 3.—Temperature in case 3, in which there was a severe left pyelonephritis as a complication of an impacted calculous lumbar portion of the ureter. The attempt to save the corresponding kidney was followed by a severe bilateral pyelonephritis which did not respond to the use of the inlying catheter.

problem of how to treat this anuria of the remaining kidney, which was complicated by severe renal infection, offered considerable difficulty. The persistent use of the inlying catheter for five days was followed by relief of the anuria and of the accompanying severe renal infection.

CASE 3.—*Severe left pyelonephritis as complication of calculus in lumbar ureter. Removal of impacted calculus followed by hematogenous extension of infection to opposite (noncatheterized) kidney. Death from bilateral pyelonephritis. No benefit from inlying catheters.*

A man, aged 49, had severe left ureteral colic for one week. There was a shadow in the upper portion of the course of the left ureter lying in close contact with an opaque catheter. It was not possible to pass the obstruction, which was found at operation two days later to be a firmly impacted calculus complicated by evidences of severe renal infection. An effort was made to conserve this (left) kidney. There were marked twitchings, inability to retain fluids, and stupor for the following week, with high readings on chemical examination of the blood (chart 3). Transitory improvement occurred after use of an inlying left catheter, followed by recurrence of high temperatures and evidences of generalized toxemia and death, in spite of repeated efforts to leave catheters in situ on both sides. Autopsy revealed marked acute pyelonephritis of both kidneys.

The only reason for adding this case is that it illustrates—as in case 1—how an infection can spread by the hematogenous route from one side to the other. In looking backward over the case, I feel that it would have been advisable not to be too conservative in attempting to save the left kidney, the ureter of which had been completely blocked by a calculus in the lumbar portion, with resultant severe acute pyelonephritis. There was temporary improvement after the use of the inlying catheter on this side, and later after it had been left in situ in the right ureter. The symptoms of nonprotein nitrogen retention were very marked throughout, and the delirium resulted in the patient's pulling the inlying catheters out, in spite of repeated reinsertion.

TECHNIC

The technic which we employ at present is as follows:

1. Small (5 F.) ureteral catheters of the opaque variety are used because the coating is more durable than is that of the plain (nonopaque).

2. Only one catheter is inserted into the ureter of the affected side. The use of two catheters, lying side by side, or of a large occluding catheter, has not been found to possess any advantages.

3. Irrigation of the renal pelvis, either continuous or intermittent, is rarely used because there seems to be ample drainage through the lumen or alongside the inlying catheter.

4. There is no time limit. The catheters have been left in situ, in one case of severe bilateral pyelonephritis, for two weeks. We wait until the temperature is normal and the urine clear for five days.

5. If there is a tendency for the catheters to be expelled, as happened recently several times when the patient's bladder became distended and its contents evacuated alongside the ureteral catheter in the urethra, we insert an inlying urethral catheter—in both sexes—to avoid accumulation of urine in the bladder.

SUMMARY

1. The use of the inlying ureteral catheter, for a period of days to weeks, is not as well known as it deserves to be.

2. Its field of application includes the treatment of acute and chronic pyelonephritis, the relief of anuria of the obstructive type, the relief of severe colicky pain in renal or ureteral calculi, or kinking of the ureter in "dropped" kidney, the sidetracking of the urine following vesicovaginal fistula operations, and the "splinting" of ureteral injuries incident to hysterectomy.

3. A small catheter is to be preferred because it permits drainage alongside as well as through its lumen.

4. Lavage of the renal pelvis can be used as a daily supplementary method, but is of little additional advantage.

5. If there is a tendency for the catheter to be expelled when the bladder becomes filled and is evacuated spontaneously, the use of a urethral inlying, or retention, catheter will act as a constant drain for the urine accumulating in the bladder.

6. The results obtained in a series of cases including all the indications mentioned have been most gratifying.

7. If the fever persists in spite of the use of the inlying catheter in both acute and subacute cases of pyelonephritis, one should think of an extension of the infection either to the perirenal tissue or such a severe degree of parenchymal involvement as to make it advisable to consider operative intervention.

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ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. COBRUS, BELCHER AND EISENDRATH

DR. A. H. CROSBIE, Boston: I agree with Dr. Eisendrath that in certain obstructive cases drainage by ureteral catheters is important. I cannot agree with him that this is important in every case. To my mind, drainage should be reserved for cases of obstruction, in which the kidney pelvis cannot drain itself. Most patients with the pyelonephritis of pregnancy have a certain amount of hydronephrosis and are benefited by pelvic drainage. A ureteral catheter cannot be left in long without doing a certain amount of harm to the ureter. In cases of acute pyelonephritis, in which the kidney pelvis drains itself completely, I see no object in allowing a ureteral catheter to remain. What can be gained by draining in a case of pyelonephritis when no hydronephrosis is present? Dr. Corbus brought out many interesting points. We all see cases of nongonorrheal infection of the prostate and seminal vesicles in which careful examination shows that there is also infection in the kidneys. I am glad to hear him lay stress on focal infection. I am more and more impressed with the fact that dead teeth and infected tonsils play a rôle in the etiology of these infections. It has been proved that 100 per cent of dead teeth have infected roots, but we have to fight with most dentists to get them to remove such teeth unless the roentgen ray shows a definite root abscess. I feel so strongly on this subject that I refuse to treat patients with pyelonephritis unless they are willing to sacrifice all such foci of infection. Dr. Belcher's cases are interesting. I have seen several of these atrophic kidneys and have removed them. The ones I have seen were all infected. Some of the patients had recurring attacks of pyelonephritis. I have always considered these atrophic kidneys as congenital kidneys.

DR. HENRY J. SCHERCK, St. Louis: In many cases I am sure that drainage is the proper treatment with or without lavage. I may have been mistaken in not recognizing strictures, but I believe it is true that in many instances what seems to be a stricture at one time does not at another time, if the pyelograms are repeated in a few days. My contention is that many of these so-called strictures are peristaltic waves or spasms of the ureter, particularly when the ureters are distended with an irritating solution, such as 12.5 per cent potassium iodide. Strictures of the ureter are not so common as they are thought to be; in fact, they are comparatively rare. In the work in our clinic, and in others in which ureters have been removed at postmortem examination and stricture sought for, it is rare to find any stricture or constriction of the ureter. I think that since Dr. Hunner started this propaganda, urologists have been finding entirely too many of these cases, and if we attempt to dilate, we will traumatize the ureter, thereby opening the door through which infection can extend upward and produce strictures where none existed before.

DR. THEODORE BAKER, Pittsburgh: Dr. Corbus has added much interesting knowledge concerning nongonorrheal infections. I reported sixty-seven cases two years ago. Now, the cases amount to 150. Of the original sixty-seven cases, 14 per cent showed kidney infection. The remaining cases showed no kidney infection after repeated renal catheterization, although I suspected that infection was present, and for that reason repeated the catheterization of the kidneys. I think that renal infection may be explained in three ways: First, it occurs from bacteria carried through the blood stream; second, it occurs secondary to involvement of the prostate and the prostatic urethra through the ureter, either because of stasis caused by stricture, or through the lymphatics along the ureter; third, it is of descending type, in which the kidneys are primarily infected and the pus comes down through the ureters. In cases of nongonorrheal type, I should like to emphasize the danger of doing cystoscopy in the active stage of the infection. I have seen several cases in which this was done, and I am sure that it aggravated all the symptoms. I think we should allow our curiosity to rest for a time, until the kidney infection and the active infection of the prostate have subsided, and then explore the kidney. I have been much interested in Dr. Eisendrath's paper, and can add my experience that the indwelling catheter has been very effective and has saved many of my patients from operation.

DR. EDWARD L. MERRITT, Fall River, Mass.: Dr. Eisendrath has stated that he does not irrigate. I have found that failure to irrigate the renal pelvis has been the cause of catheter blockage in many cases, and for that reason I have given up using one catheter and use two, irrigating with sterile water through one and following this with a solution of mercurochrome. I am tremendously interested in the subject of ureteral stricture, although I feel that we should not make a definite diagnosis of this condition unless the ureterogram shows it, with definite dilatation above the point of stricture. I should like to know how Dr. Scherck explains the alleviation of symptoms following ureteral dilation. I believe that

something other than peristaltic waves exists when definite relief results following ureteral dilation.

DR. GEORGE R. LIVERMORE, Memphis, Tenn.: I have always maintained that stasis is the chief cause of kidney infections. Although there may be a definite focus of infection, it does not lodge in the kidney unless stasis is present or the dosage overwhelming. If there is obstruction there is no question but that kidney infection will result. Regarding ureteral drainage, what could be better than putting in an instrument that will hold the ureter open and drain the kidney? There is no question about the value of the ureteral catheter which will really drain. If it does not drain, one cannot expect to get results. Dr. Eisendrath says that he does not irrigate, but I know he means that this is not necessary as long as drainage continues; if drainage stops, he has the nurse or the house physician insert something which will relieve the block and start the drainage again. I am firmly of the belief that ureteral stricture is a definite pathologic entity. It does occur as the result of trauma following operation, as the result of stones, and as the result of infection. As Dr. Merritt just said, why do these patients get better immediately following dilation when they have failed to improve under any other method of treatment? Dr. Corbus sounded a definite note of warning when he said that we should not be too vigorous in our attempts to dilate and cause trauma. It is a question whether the infection starts in the prostate and is taken up by the blood stream and carried to the kidneys, with resulting infection in both the kidneys and the prostate, or whether it starts in the teeth and tonsils, or the sinuses, infects the kidneys and comes down, causing infection of the prostate from above. I agree with Dr. Corbus that infections of the kidney and ureter may be responsible for urethritis.

DR. HERMON C. BUMPUS, JR., Rochester, Minn.: Another type of case which has not been mentioned is the pyelitis of pregnancy. Often, when we are called in consultation in cases out of town, we find a patient with an extremely high fever and very ill, who quite evidently has pyelitis of pregnancy. If we suggest drainage, the physician in charge may say that the patient is too ill. We feel that this is the very time to drain, and the ureteral indwelling catheter has given us the best results in these cases. Often, in going over a large series of pyelograms, we see dilated calices and dilated pelves and consider the possibility of previous pyelonephritis, but the history does not bear this out, and we find on further investigation that the patient has had several children. I want to compliment Dr. Corbus on his paper. The lesion shown so definitely in the ureterogram is most interesting.

DR. HERMAN L. KRETSCHMER, Chicago: Regarding the therapeutic use of the ureteral catheter, I think we all agree that, in certain cases, obstruction can be overcome by the use of the ureteral catheter, and in a certain number of cases this is a very valuable therapeutic agent. I do not, however, agree with Dr. Eisendrath as to the advisability of routine drainage in acute pyelonephritis by means of the indwelling ureteral catheter. I have made it a rule not to drain in cases of acute pyelonephritis, as a routine, except in cases of pregnancy, and here we do not drain very frequently. When there has been a question of whether or not we should drain, in instances in which we have waited, the question has automatically answered itself. Regarding Dr. Corbus's paper, there is no doubt that in some of his pyelograms, definite strictures of the ureter were shown. Undoubtedly many cases are diagnosed as stricture of the ureter which do not show a dilatation above the stricture, and hence I do not believe that they are true strictures. In some instances, we have found what was apparently a stricture with dilatation above at one examination, and the subsequent examination, made a few days later, failed to show the dilatation. On the other hand, we have seen a collection of fluid in the upper ureter that looked like a collection of fluid in a dilated ureter, and in a second pyelogram, made immediately afterward, the collection of fluid was seen in the lower ureter. It would appear from this that many of the cases called stricture are dilatations not due to strictures but to the peristaltic action of the ureter. Regarding the relationship between pyelitis and urethritis, it is rather interesting that pyelitis is a disease that occurs so frequently in women. Yet, quite often women suffering from pyelitis are seen who have a profuse urethral discharge. On the other hand, profuse discharge in a male is often due to a chronic prostatitis or a chronic seminal vesiculitis. It is also well known that patients who have chronic prostatitis and chronic seminal vesiculitis often have pyelitis that disappears when the infection in the prostate and vesicles is treated.

DR. A. W. NELSON, Cincinnati: Did Dr. Corbus say that a gonococcus infection was cleared up by ureteral dilation?

DR. R. ARTHUR HOOE, Washington, D. C.: It seems that a question has arisen as to the length of time the catheter should be left in the ureter. I have had one such case recently, and perhaps stimulated to some degree of boldness by Dr. Eisendrath's results and his conversation with me, I left the catheter in one side for seven or eight days, and in the other side as long as fourteen days. The catheters were then removed, without any bad results. There was no active infection, and no demonstrable bad effect in this case. Following the removal of the catheter that had remained in fourteen days, a cysto-ureterogram was made and not only had the ureter remained contracted, but there was no regurgitation in the ureter, and there was an apparently good result. I think that one problem is in getting the follow-up on these patients. After they have been confined to bed with these catheters in place, it is hard to get them to come back for a check-up afterward.

DR. DANIEL N. EISENDRATH, Chicago: If Dr. Crosbie will give this method a trial, I am sure he will be convinced of its value in a few cases. As to the time element, Dr. Hooe has answered that. In the cases in which the acute infection has subsided, as in cases of stone, in which that is likely to contaminate the wound, the method is of great value. It is also of value in the cases of reflux in which we have some drainage of the kidneys, but in which the ordinary method of lavage and treatment of the bladder itself will be of no avail. In regard to the statement Dr. Crosbie made that he believed all atrophic kidneys were congenital, it is true that there is a form of atrophy which we might call primary atrophy to distinguish it from the secondary atrophy due to pyelonephritis. Those kidneys are greatly deformed and make one think of a neoplasm. In regard to Dr. Livermore's statement, I wish to correct a wrong impression that I may have made. When a catheter becomes blocked up, we do try to open it, as he said, but we do not worry as much as we used to, for there is drainage along the side of it, and we are guided by our clinical observations just as much as by the drainage from the ureteral catheter.

DR. B. C. CORBUS, Chicago: Replying to the question of Dr. Nelson, the urethritis was cleared up by establishing kidney drainage and removing the foci of infection that were present. I am glad that some of you have seen more strictures of the ureter this morning than ever before, for I think you will finally come to believe as I do, and realize that this often causes hydronephrosis and also infections of the lower urinary tract. If these cases are investigated carefully, according to the methods which I have outlined, many will be found to show upper urinary tract infection. If major urologic surgery is indicated, it is preferable to have complete drainage of the lower ureter by gradual dilation first.

Interdependence Between Mental and Physical Health.—There is also an intimate interdependence between mental and physiological health. This is most clearly illustrated in emotional reactions. Fear, anger and strong excitement, for example, stimulate the ductless glands to greater activity, inhibit digestion, and increase the heart rate. On the other hand, it is well known that illness or defective functioning of any important parts of the body is conducive to moods of depression, worry, irritability. There are many reasons why it is healthful to abstain from the use of narcotics and alcoholic drinks. These reasons are moral, social and economic; but, if they are sound, they are based on the facts of physiologic harm wrought by use of these substances.—Report, Joint Health Committee, Health Education, pp. 26-27.

GONORRHEAL ARTHRITIS *

B. A. THOMAS, M.D.
PHILADELPHIA

"An inflammatory articular affection dependent upon gonorrhea" seems to have been first described by Salle and Swediaur in 1781, and further elaborated by Brodie in 1818. Presumably, John Hunter recognized the disease to be of venereal origin as early as 1716, but because of his false judgment and assertions that gonorrhea, chancre and syphilis were one and the same, thereby retarding investigation as to the true nature of those diseases for more than a century, until Ricord propounded the truth, he cannot be accredited as the pioneer in this field. Fournier, relative to phalangeal joint involvement, referred to the disease as "radish fingers."

I can recall no disease, other than arthritis, in which the etiology and pathology are more diverse; therefore the difficulty, frequently encountered, particularly in those cases developing a few months or years after the acute attack of gonorrhea, in establishing the gonococcic origin of the condition. The importance of identifying the true nature of the infection responsible for the joint involvement, from the advantage standpoint of biologic therapy, cannot be overestimated. For this reason, and because of insufficient attention to it, not to mention the variable concepts of the profession generally, relative to the etiologic rôle of various bacteria concerned, and the resultant pathologic joint changes, I have ventured to present a not inconsiderable experience with arthritis of undoubted gonorrheal origin. Extensive observations and direct inquiries relative to the treatment of gonorrheal arthritis, both by orthopedists and by urologists, have revealed the greatest disparity and pessimism in the management of this often unwelcome and obstinate condition. The variability of treatment is striking, and unquestionably accounts for many indifferent and poor results. I doubt whether there is any disease in the whole category of medicine where today more inconstant or conflicting opinions exist relative to treatment.

One urologist, discussing the treatment of "gonorrheal arthritis" at great length, considers every possible accepted therapy of gonorrhea and its complications, prostatitis and seminal vesiculitis, but says absolutely nothing about the treatment of the involved joints. One orthopedist writes that the "treatment of acute and subacute gonorrheal arthritis is not within the province of orthopedic surgery," but proceeds to describe what he would do if a patient with an acute or subacute attack consulted him, which is not infrequently the case, making no mention whatever of the value of biologic therapeutics. Just as tabes and general paralysis begin in the secondary stage of syphilis, so, too, do ankylosis and permanent joint disability begin in the subacute stage of arthritis. This phase of the disease, therefore, is just as much the field of the orthopedist as it is of the urologist. Another orthopedist states that in his experience "gonorrheal arthritis very frequently leads to a very complete ankylosis, for which arthroplasty is necessary to secure motion in the joint." He says not a word concerning the importance of either treatment of the local urethral gonococcic focus or immunology. Urologists, generally, and therefore also their trusting consultants, are too prone to depend on prostatic massage and irrigations to clear up the focal infection, when the imperative demand is for more up-to-date and thorough treatment directed to the seminal vesicles, Cowper's glands, Littré's glands, and, in the female, salpingitis, endometritis or cervicitis, bartholinitis and skeneitis.

It is therefore with the hope of reawakening interest in the correlation of experiences, leading to a better crystallization of thought and standardization of treatment, that I have prepared this communication. It represents an intensive study of 107 cases, from the Polyclinic and Presbyterian hospitals and from private practice (table 1).

The incidence of arthritis as a metastatic complication of gonorrhea has never been great, averaging only from 2 to 3 per cent. Males are far more frequently affected than females, in the proportion of 97 to 10 in this study, possibly because of the fact that they possess seminal vesicles and a prostate, together with a more complicated, longer and poorly draining urethra. Joint involvement is rarely encountered in vulvovaginitis of children and in gonorrhea and ophthalmia neonatorum. The precipitating factor, not infrequently, is trauma, directly to the joint or in the form of ill advised or careless urethral instrumentation or treatment, or excessive activity or sexual excitement during the acute stage of the urethritis. The arthritic symptoms in the acute stage of a gonococcic infection usually manifest themselves during the second or third weeks; the earliest case recorded is five days. However, joint involvement may supervene any time throughout the acute or chronic course of the disease or its urethral or uterine adnexal complications.

Pemberton, in a study of 400 cases in the army, found the cause to be in the genito-urinary tract in 12.5 per cent. (Pollock and Harrison, in a study of 812 cases of gonorrhea in the British army, observed arthritis in only 1.85 per cent.) Surgeon General Ireland informs me that in the U. S. Army, from April 1, 1917, to Dec. 31, 1919, gonorrheal arthritis occurred 7,895 times in 259,899 admissions on account of gonococcic infection, or 3.03 per cent. Thus, apparently, the incidence of arthritis as a complication of gonorrhea is small, and this is undoubtedly true from the standpoint of acute gonococcic infection, as revealed by army statistics. However, in view of the prevalence of arthritis of the infectious type, on the one hand, and gonorrhea, on the other, in spite of the common occurrence of tonsillitis, sinusitis and infected teeth, I am inclined to believe that many cases of arthritis, developing months or years after the acute gonorrhea, will be found to have at least a mixed or superimposed pyogenic focus of infection in the seminal vesicles, prostate, uterus or tubes. The observations of Pemberton, 12.5 per cent, contrasted with the small incidence of arthritis, as a complication of acute gonorrhea, 3.03 per cent, are substantial criteria for verification of this thought.

It must be conceded that the arthritic or periarthritic manifestations of gonorrhea are the metastatic exponents of a blood-borne infection. Assuredly, there are many instances in which the joint fluid is found to be sterile—a toxic, in contradistinction to a bacterial, synovitis—in which the bacteria, localizing temporarily or absolutely in the epiphyses of the bones, cartilages or synovial membranes, by their inflammatory reaction evoke a serous effusion into the synovial sac of the

* Because of lack of space, this article is abbreviated in THE JOURNAL. The complete article appears in the Transactions of the Section and in the author's reprints.

* Read before the Section on Orthopedic Surgery at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 20, 1927.

joint; in other cases, depending on such factors as virulence of the infection and the vital resistance of the individual, bacterial invasion of the joint occurs practically at the onset of the involvement. In my experience, gonorrheal arthritis has been polyarticular in 58 per cent and monarticular in 42 per cent of cases. The involved joints in their order of frequency have been: knee, 58; ankle, 50; hip, 32; wrist, 21; shoulder, 19; phalangeal, 17; elbow, 13; metatarsophalangeal, 8; spine, 8; metacarpophalangeal, 7; sacro-iliac, 1; temporomaxillary, 1; sternoclavicular, 1. Pathologically, the conditions affecting the joint may be classified as in table 2.

Clinically, these various pathologic types are divided into acute and chronic groups and treated accordingly.

The symptomatology of gonorrheal arthritis in its acute and chronic forms differs in no material way from that of an arthritis due to other infections, it being borne in mind that the gonococcus may cause a suppurative inflammation; also that metastatic joint involvement may arise from mixed pyogenic postgonorrheal foci, lurking in the seminal vesicles or prostate gland.

TABLE 2.—*Conditions Affecting the Joints*

I. Arthralgia, neuritis	without intra-articular or extra-articular lesions, e. g.	
II. Synovitis	(a) Serous (without bacteria; with bacteria)	
	(b) Serofibrinous	
	(c) Purulent	
III. Arthritis	(a) Degenerative (tissue changes formerly styled "atrophie")	
	1. Nonsuppurative	
	2. Suppurative	
	(b) Proliferative (tissue changes formerly styled "hypertrophie")	
	1. Ankylosis	
	(a) Fibrous	
	(b) Osseous	
	2. Osteophytes (exostoses)	
IV. Periarthritis	(a) Tenosynovitis	1. Nonsuppurative
	(b) Bursitis	
	(c) Extension of joint	2. Suppurative

The diagnosis of the gonococcic origin of a synovitis or arthritis, occurring in the second or third week of an acute gonorrhea, does not offer any difficulties; the discovery of gonococci in the genito-urinary tract or its appendages is almost conclusive, and the demonstration of gonococci in the aspirated fluid of the suspected joint is pathognomonic. The tendency to rapid polyarticular involvement of the larger joints is most characteristic. Acute gonorrheal arthritis must be differentiated from acute rheumatic fever. The latter is prone to be more migratory than gonococcic infection, and threatens to involve all the joints; but in so doing the first to be affected tends to become symptom free as the last are involved, whereas, in gonorrheal arthritis, symptoms persist in the first joint affected. The joint symptoms are more acute and the temperature is higher in rheumatic fever, and sweating and prostration are more marked. Chills and sweats, however, may be present in gonorrheal arthritis, if the inflammation becomes purulent. The absence of gonococcic infection, especially with antecedent joint attacks, favors rheumatic fever. Other pyogenic arthritides, due to infected teeth or tonsils, and also urinary, biliary and gastro-intestinal infections, and likewise all degenerative and proliferative types of joint involvement must be differentiated by a thorough urologic investigation designed to eliminate a possible gonorrheal or post-gonorrheal focal infection. Syphilis and tuberculosis not infrequently complicate the problem, but the Wassermann and gonococcus serologic tests, the tuberculin test and the roentgen-ray examinations will seldom fail to reveal the true nature of the arthritis. Assuredly, there exist many cases of arthritis due to, or at least propagated by, a faulty metabolism, but the vast majority, at least 75 per cent, are initiated by some form of infection, of which gonococci or other associated bacteria, feebly active or dormant in the seminal vesicles or prostate, play a far more important rôle than is commonly suspected.

The prognosis in gonorrheal arthritis should always be guarded. It is, however, directly dependent on the promptness of the most efficient treatment, and is better in the acute than in the chronic form of the disease, before degenerative or proliferative anatomic tissue changes occur. The roentgen ray, obviously, is of much aid in defining the full extent of the pathologic changes, the all-important prognostic criterion; for when visible evidence of involvement of cartilage or bone is demonstrable, the probability of some resultant disability of the joint is great. Formerly, the functional results were very bad, as contrasted with the therapeutic possibilities today. As the result of modern methods, particularly biotherapy and chemotherapy, begun early, with treatment directed more to combating the cause and eradicating, rather than merely ineffectually treating, the harbors of focal infection in the genito-urinary tract, the incidence of pyo-arthrosis and ankylosis, necessitating arthrotomy and arthroplasty, has been markedly lowered. Disability from limitation of motion or ankylosis should very rarely, but will occasionally, result, irrespective of any treatment.

The treatment of gonorrheal arthritis embraces not only the management of the joint but also the local urethral or adnexal foci of infection, plus the systemic invasion which not infrequently coexists. Negligence of the last has undoubtedly thwarted many of our good intentions in the past. Moreover, the treatment of the involved joint or joints itself comprises two phases of the disease; one chronic, in which degenerative or proliferative tissue changes have produced limitation of motion as a result of fibrous or bony ankylosis, requiring for its final correction forcible manipulation or arthroplasty, associated with other various forms of physical therapy. This, obviously, is the exclusive province of the orthopedic surgeon, and will receive no further consideration by me. Secondly, there is the acute form, a synovitis, arthritis or periarthritis, with or without effusion, which may or may not be purulent, and in which there is no apparent destruction or proliferation of cartilage or bone. This is the stage of the disease that should engage the attention equally of the orthopedic and the genito-urinary surgeon, as well as all practitioners of medicine, because it constitutes the golden opportunity for treatment. If such treatment is efficient and successful, which should be more frequently the case, much invalidism will be averted. The discouraging feature has been the variability and multiplicity of treatment of this type of arthritis. Apparently, the results have not been satisfactory, and more effort must be exerted to determine the reason, and if possible to crystallize thought and standardize methods of treatment. Therapeutic measures to date (in addition to a low calory diet and drugs, notably phenyl salicylate, arsenic, and the iodides of iron and potassium) include: rest in bed or by immobilization with splint, cast or brace, or no rest at all in the milder forms; elevation; local applications, such as compres-

sion, counterirritants, cautery, various lotions, ice, salicylates, boiled milk, constrictive hyperemia, massage, heat by packs, air, diathermy, roentgen ray, radium, and various rays from violet to red quartz; aspiration and autoserotherapy by reinjection of synovial fluid intramuscularly, with or without injection of the joint with various chemical solutions (solution of formaldehyde and glycerin, 2 per cent; tincture of iodine, acriflavine, mercurochrome); antiserums (gonococcus, meningococcus); gonophages; arthrotomy, with or without lavage and drainage of the joint; urethral irrigations; prostatic and attempted spermatocystic massage; medication of the seminal vesicles by vasofomy or vasopuncture, or by way of the ejaculatory ducts, or by injection through the rectal wall (Stellwagen) or perineum; seminal vesiculotomy or vesiculectomy or prostatotomy or prostatectomy; antigonococcic and antimeningococcic serums subcutaneously and intravenously; autogenous and stock vaccines; phylacogens and immunogens; various chemicals or drugs intravenously, as colloidal silver or iodine (Pregl[1]), mercuric chloride, sodium iodide alone or with salicylate, acriflavine, mercurochrome, calcium chloride, or ammonium ortho-iodoxybenzoate.

COMMENT

This list includes measures that may be classified as excellent, good, bad and useless. Some comment in certain respects might be advantageous.

1. Absolute rest of the affected joint for a week or two is obligatory and may save the patient weeks, months or years of disability. Great caution must be exercised not to immobilize the joint too long.

2. Antigonococcic serum intravenously or subcutaneously, or ortho-iodoxybenzoic acid should be administered intravenously, as soon as possible, the former repeated in ascending doses every other day for three or four injections, and the latter twice weekly for three or four weeks. A rather extended experience with serums and bacterins has convinced me that the millenium in gonococcic biologic therapy has not been and will not be reached until more potent products are produced—an object that has never been visualized or striven for to the limit of possibilities. Let us hope that, with the new hormone culture or calf's brain mediums, the virulence of the gonococcus may be increased for better autogenous and polyvalent stock bacterins and also for a more potent antitoxin; in chronic cases, bacterins should be given preference to antiserums. A brief experience with mercurochrome, calcium chloride and Pregl's iodine has not convinced me of the reputed utility of these chemicals; obliterative, noninflammatory phlebitis has followed the employment of the last in two patients.

3. If pain is severe, 4 cc. of 25 per cent solution of sodium salicylate, and 15 to 30 grains (1 to 2 Gm.) of sodium iodide will often exert a miraculous effect.

4. Although arthrotomy rarely may be necessary in purulent effusions, as a rule aspiration and reinjection of the joint, only if the fluid is purulent, with the specific antiserum or from 5 to 20 cc. of solution of formaldehyde and 2 per cent glycerin, repeated if necessary, will usually suffice. I have never observed any notable advantage derived by injecting the patient, intramuscularly, with his own aspirated synovial fluid.

5. In all cases, as soon as expedient, local genito-urinary treatment consisting of irrigations, prostatic massage, medication of the seminal vesicles, preferably by vasopuncture, or, if abscessed, their drainage, together with the prostate, by perineal operation, must be executed for the best joint results. The rôle of the seminal vesicles as harbors of infection, demanding special treatment, not possible by routine prostatic massage, is not sufficiently appreciated.

6. Hyperemia by Bier's method or induced by superheated air or electricity, on the subsidence of acute swelling, followed by passive and active motion, is very beneficial.

7. In all cases, investigation for other nongonorrheal foci of infection, and their eradication, if factors in perpetuating the arthritis, is essential.

8. In chronic cases, a complete physical examination, including chemical analysis of the blood, with the collaboration of a medical expert on arthritis to prescribe the proper diet and general tonic treatment, including drugs, is necessary for the best results.

SUMMARY

A review of the 107 analyzed cases constituting the material for this presentation and summarized in table 3 will reveal seven groups, so specified for comparative study as to the relative value of various forms of therapy. At least a dozen cases are not included because of insufficient data. Indeed, the "present result" in many cases is not noted for various reasons, making it necessary to record the result as "improved," whereas in a number of the untraceable cases "cured," undoubtedly, should be recorded. Nevertheless, it will be observed that the longest average time of hospitalization was seventy-nine days in group 1, in which merely irrigations with or without palliative treatment to the joints were done. In group 2, which includes patients with chronic prostatitis, in whom prostatic massage was added, the average number of hospital days was reduced to fifty-three. Group 6 likewise shows much improvement over group 1, as the result, I believe, of the unquestionable value of associated biologic therapeutic agents; the higher percentage of cures 60 versus 6.6 is also noteworthy. The value of operative procedures on joints, obligatory when purulent, is apparent in group 4, in which the hospital days were reduced to forty-three. When treatment was directed especially to the seminal vesicles and prostate, as in group 5, hospitalization was lowered, to the minimum of twenty-seven days. The excellent showing of forty-seven days for group 7 would seem to indicate that there is a land of promise for intravenous chemotherapy. The low figures for group 3 mean simply

TABLE 3.—*Summary of Treatment*

Group	Number of Cases	Average Number of Days Hospitalized	Per Cent Unimproved	Per Cent Improved	Per Cent Cured	Per Cent Permanently Disabled
1. Urethral irrigations with or without joint palliation	15	79	20	73.3	6.6	?
2. Prostatic massage and irrigations with or without joint palliation	23	52	0	34.7	8.7	0
3. Joint fixation	4	28	50	25	?	25
4. Joint operative measures	6	43	16.6	50	16.6	16.6
5. Special treatment of seminal vesicles and prostate	11	27	18.1	54.5	27.2	?
6. Associated biologic therapy	37	65	5.7	31.2	60	?
7. Associated intravenous chemotherapy	11	47	0	63.6	27.2	9.1

1. "Pregl's Solution" for Varicose Veins, Queries and Minor Notes, J. A. M. A. 81:1628 (Nov. 10) 1923.

that most of these patients left the hospital a few days after the application of a cast or splint. It shows also a very remarkable and high percentage of "unimproved" and "permanently disabled." It will be observed that in groups 2 and 7 there was no patient who was unimproved. The highest percentage of cures occurred in those groups in which the prostate and seminal vesicles received special attention and in which biologic and chemotherapy were employed.

ABSTRACT OF DISCUSSION

DR. D. P. WILLARD, Philadelphia: This type of arthritis is not one for the orthopedist or the urologist to treat solely; it is a combination disease, and the best results are always obtained when there is expert care of the genito-urinary tract as well as expert care of the joint. In the acute cases, which I think are rather rare, urologic treatment is certainly by far the more important. The joint itself is not a bad factor in the disease. It may be causing the most pain and the most disability, but simple treatment of an inflammatory joint, using protection, pressure, fixation, and, in the more severe cases, relief of internal tension in the joint, is probably what is necessary, provided the genito-urinary condition is taken care of effectually. Chronic cases are seen more often in orthopedic clinics than acute cases. I believe that gonorrheal infection is probably much more common than we suspect. Chronic subacute gonorrheal arthritis is very hard to diagnose at times. It has the appearance of the ordinary infective arthritis. For years our attention has been called to infections from the teeth, tonsils, and so on, and we are very likely to forget the genito-urinary tract unless special attention is called to it, and usually that is not done. The history of posterior gonorrheal arthritis is often vague; the symptoms may be so mild that they escape the attention of certain patients, and unless we delve into the genito-urinary history carefully, we may overlook the infection that has given rise to this condition. Not only the posterior urethra, but the prostate and, especially, the seminal vesicles are very often the source of the infection, and a superficial genito-urinary examination may miss the infecting cause. Those sources of infection must be removed. Dr. Thomas speaks of vaccine therapy. Undoubtedly that is an aid in the treatment of gonorrheal infection. On the other hand, it is not a treatment per se; it is only an addition to the treatment we are using, both in getting rid of the infection and in treating the joint. In the treatment of chronic arthritis from any cause, in the inflammatory stages or in the subacute inflammatory stages, rest and protection are absolutely essential. If the genito-urinary aspect of the treatment is well taken care of, then treatment directed to the joint will be all that is necessary. In the later stages, after the inflammation is gone, physical therapy is by far the most important therapeutic agent. If this first treatment is adequately carried out, operative surgery on these joints will be very slight.

DR. ALBERT H. FREIBERG, Cincinnati: Gonorrheal arthritis is the best example of a focal infection. We are very frequently able to recover the gonococci from the joint. At the same time, to expect that there will be recovery in a gonorrheal arthritis mainly as the result of attacking that original focus in the seminal vesicles or urethra or prostate is an example of medical naïveté which I do not believe is excelled anywhere. If it is not possible to cure this vesiculitis or prostatitis or urethritis without doing all kinds of things to it in loco, then why should it be possible, simply by treating the urinary infection, to cause the joint to clear up? It not only should not be possible but I do not think that it is possible. Gonorrheal arthritis occurs in different forms, not merely acute or chronic, but as a true synovitis of gonorrheal character, which I think is the more common variety, and as a periarthritis in which the infection seems to have its location chiefly in the periarticular structures. Even in these cases I am inclined to believe that the infection probably came by way of the synovial membrane. When the synovial membrane is the chief seat of the infection and there is an effusion, our attitude ought to be perfectly clear. The gonococcus is killed by a temperature of 110 F. and to open such a joint and wash it out very thoroughly with water somewhat hotter than 110 F., even up to 115 F., which the body will very easily bear, is a measure which is not rational but which has had, in my hands at least, very satisfactory results. The joint is washed out thoroughly through a small incision and afterward the incision is sewed up without any attempt at drainage. It is important, however, that this washing shall evacuate all of the gelatinous, fibrous deposit which is invariably found in the synovial cavity. In treating the periarthritic cases, many of us have overlooked the great value of congestive hyperemia. It has the effect not only of relieving pain but of helping the resolution of this process more than anything else; certainly more than local application of heat. I am decidedly of the opinion that the use of the biologic agents, particularly vaccines, is of value, but it has not been without its disappointments in my hands. I am in favor of treating the primary focus, but I do not believe that therein lies the complete solution of the question. Nature still has to cure that infection in the secondary place as well as in the primary place.

DR. RICHARD KOVACS, New York: There can be no question that physical therapy, particularly diathermy, belongs among the most modern therapeutic methods in arthritis. At the Reconstruction Hospital in New York, we have had quite a number of cases of arthritis of gonorrheal origin, and our results with diathermy have been successful. The gonococcus is easily affected by heat, being thermolabile, and a temperature of from 108 to 115 F., or even less, will kill it. It is necessary to open the joint to get the heat into it. Diathermy will convey any amount of heat desired into the joint safely and effectively, and it has proved most effective in the subacute and chronic stages. Applying to the site of focal infection, the seminal vesicles, the prostate, and, in women, to the cervix and the urethra, has been extensively done at Dr. Cumberbatch's clinic at St. Bartholomew's in London. He found that by simply treating the focal infection he secured excellent results, and others have corroborated these observations.

DR. B. A. THOMAS, Philadelphia: I do not wish to imply that I am attempting to bring out anything new on this subject. I wish simply to call attention to what I believe is a current mistake among orthopedists as well as genito-urinary surgeons; namely, that often our minds are too much centered on the joint, or on the prostate or on the seminal vesicles as the foci of infection, with a resultant lack of appreciation of the fact that we are dealing with a blood borne infection, and that because of improper attention to this phase we shall fail to obtain results. In the treatment of this disease, it must be borne in mind that we are dealing with a blood stream infection that should be treated first, either by biologic therapy (which I believe will show better results so soon as better or more potent antigonococcic serums shall be produced) or by chemotherapy; second, by the eradication of the focus or foci of infection in the genito-urinary tract, and third, by measures directed to the involved joint or joints. These must be fundamental considerations. Too often treatment has been directed solely to the involved joint, including surgical intervention, with little or no consideration of the local urethral, adnexal or general blood stream infection. Aspiration of the joint and arthrotomy will, of course, be necessary occasionally to evacuate a purulent effusion, the indications for which, however, will be less frequent when more prompt and efficient attention is given to the local and general aspects of the infection. Thus, physical therapy or palliative treatment of the joint, without concomitant treatment directed to the focal genital condition and the blood, is doomed to failure or to unsatisfactory results, just as massage of the prostate; but failure to include the seminal vesicles, and neglect of the blood stream infection, are destined to failure of fulfilment of the best in the treatment of this gonococcic complication. Early and absolute, but not too prolonged, rest of the joint is just as essential as vasopuncture and medication of the seminal vesicles, or even seminal vesiculotomy in selected cases.

SHOE-DYE POISONING—RELATION TO METHEMOGLOBIN FORMATION

REPORT OF A CASE IN A TWO-YEAR-OLD CHILD *

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The first cases of shoe-dye poisoning following the wearing of recently dyed shoes were reported in 1900.[1] Following this, Stone[2] reported a fatal case with necropsy observations in a young man. Numerous cases have appeared since in the literature. Although black shoe dye was responsible in most instances, Stifel,[3] in 1919, reported seventeen cases originating in an army camp in which brown dye had been used. Subsequently Muehlberger,[4] analyzing the forty-eight cases reported up to then in the American and European literature, found that in the twenty-five American cases nitrobenzene was the toxic agent. He found that aniline was the chief toxic agent in the European cases reported.

In the ten cases which he reported at that time, Muehlberger found that six were due to aniline, these being the first to be reported in this country. Pateh[5] has recently reported three more cases due to aniline.

Cases of aniline and nitrobenzene poisoning are well known industrially. They have also been known to follow the use of hair dyes and cosmetics containing either of these substances. It is now well known that absorption of aniline and nitrobenzene occurs through the skin with resultant symptoms similar to those found in shoe-dye poisoning. The chief manifestations are weakness, vertigo, somnolence, digestive disorders, headache and cyanosis. The blood is dark, chocolate brown, almost black.

A similar condition has been reported in infants who have become cyanotic after wearing diapers recently marked with laundry ink.[6] The possible relationship between this condition and the instances of cyanosis in infants described by Winckel[7] in 1879 has been considered.[8]

Shoe-dye poisoning is relatively uncommon in children. Riviere[9] reported eleven cases of cyanosis in children from 1½ to 11 years of age following the use of a shoe-dye containing aniline. Muelberger[4] reported two cases in children of 3½ and 6 years of age. Ullmann[10] has called attention to the fact that children are especially susceptible to shoe-dye poisoning.

The following case[11] is of interest in this connection:

F. H., a boy, aged 2 years, was admitted to the Mount Sinai Hospital, New York, at about 6 p. m., Jan. 3, 1926, with the chief complaint that he had suddenly turned dark. The family history was essentially negative. Two other children were well. The father was an interior decorator. He had not kept dyes or paints at home. The patient was a full term child and the birth history was normal. He had been breast fed for two months and had walked and talked at 1 year. Except for a slight illness at 14 months which may have been measles, he had had no illnesses. He had never been cyanosed before and had not had cardiac symptoms. At about noon on the day of admission, the patient had been put to sleep in his carriage outdoors. At 3 p. m. it was noticed that his color was somewhat dark and on being brought into the house he became extremely dusky. The dusky color was noticed to become paler at times but persisted so that the family physician advised admission to the hospital. No history of previous medication or contact with dye could be obtained.

The patient was well developed and well nourished. He lay comfortably in bed. The skin, lips and nails were a very striking dirty, grayish blue. The temperature was 98.6 and pulse 130 a minute. The respirations were 30 a minute, shallow and irregular, with short periods of apnea. The color would become perceptibly darker, fading again when the respirations were resumed. The child's mentality was clear. The remainder of the physical examination was essentially negative. Examination of the heart and lungs did not reveal any abnormality.

The father stated that the child's shoes had not been dyed. Subsequently, it was found on questioning the mother that at about 10 a. m. on the day of admission she had dyed the child's shoes and he had worn them constantly until his condition was discovered at 3 p. m. While asleep in the carriage, he had wet his shoes and stockings.

Blood examination revealed: hemoglobin, 76 per cent; erythrocytes, 5,448,000; leukocytes, 16,200; polymorphonuclears, 71 per cent; lymphocytes, 28 per cent; eosinophils, 1 per cent.

The urine was clear, colorless and acid; the specific gravity was 1.030; it was negative for albumin, sugar and acetone.

Spectroscopic examination of the urine was negative for methemoglobin.

The blood was dark, chocolate brown, almost black. The carbon dioxide combining power of the blood was 30.4 per cent by volume. The urea nitrogen was 19.6 mg. per hundred cubic centimeters; the blood sugar, 85 mg. Spectroscopic examination of the blood, examined unfortunately eighteen hours after withdrawal, revealed only a questionable absorption band for methemoglobin. Chemical examination of the dye used (a well known commercial brand) revealed the presence of a large amount of nitrobenzene.

The child was treated by rest in bed and by oxygen inhalations. The following morning his color was normal. He was discharged perfectly well four days later.

RELATIONSHIP TO METHEMOGLOBINEMIA

The solvents used in shoe-dyes, either aniline or nitrobenzene, have each been said to produce methemoglobinemia. In the cases reported in infants in which cyanosis followed the wearing of recently marked clothing, aniline[12] was isolated from the stamping-ink in one series of cases and nitrobenzene in another.[13] Methemoglobin was reported in the blood of the infants of both series by spectroscopic examination.

Price-Jones and Boycott[14] injected aniline into rabbits and found that "the blood was turbid and brownish, the spectroscope showed a band almost but not quite corresponding to that of methemoglobin."

Young and his associates[15] recently seem to have definitely shown that in neither dogs nor rabbits can methemoglobinemia be produced by aniline when injected intravenously or rubbed on the shaven skin, nor when the animals were exposed to the fumes of a drug. These authors found that the blood of the animals became chocolate brown and contained para-

* From the Department of Pediatrics and Infectious Diseases, University of Michigan Medical School.

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2. Stone, W. J.: Fatal Poisoning Due to Skin Absorption of Liquid Shoe Blacking, J. A. M. A. **43**: 977 (Oct. 1) 1904.
3. Stifel, R. E.: Methemoglobinemia Due to Poisoning by Shoe Dyes, J. A. M. A. **72**: 395 (Feb. 8) 1919.
4. Muehlberger, C. W.: Shoe Dye Poisoning, J. A. M. A. **84**: 1987 (June 27) 1925.
5. Pateh, A. J.: Aniline Shoe Dye Poisoning, J. A. M. A. **86**: 944 (March 27) 1926.
6. Rayner, W.: Brit. M. J. **1**: 294 (Feb. 13) 1886. Thomsen, A.: München. med. Wchnschr. **68**: 399 (April) 1921. Neuland, W.: Med. Klin. **17**: 903 (July 24) 1921. Ewar, H.: Deutsche med. Wchnschr. **46**: 1078, 1920.
7. Winckel, F.: Deutsche med. Wchnschr. **5**: 303, 1879.
8. Nitrobenzene Poisoning, Methemoglobinemia and Winckel's Disease, editorial, J. A. M. A. **77**: 1108 (Oct. 1) 1921.
9. Riviere, C.: Ann. de méd. et chir. inf. **15**: 551, 1911.
10. Ullmann, H.: Deutsche med. Wchnschr. **52**: 998 (June 11) 1926; abstr. J. A. M. A. **87**: 452 (Aug. 7) 1926.
11. Reported by courtesy of Dr. Bela Schick, chief pediatrician, Mount Sinai Hospital, New York.
12. Neuland (footnote 6).
13. Ewar (footnote 6).
14. Price-Jones, C., and Boycott, A. E.: Guy's Hosp. Rep. **63**: 309, 1909.
15. Young, A. G.; Muelberger, C. W., and Meek, W. J.: J. Pharmacol. & Exper. Therap. **27**: 101 (March) 1926.

amidophenol. The oxygen capacity of the blood remained normal; spectroscopic examination was negative for methemoglobin. Death was shown to be cardiac in origin by means of electrocardiograph tracings.

The relationship of nitrobenzene poisoning to methemoglobinemia has not been definitely established. Cushney [16] states that "the blood is chocolate brown in color, examined with the spectroscope methemoglobin is very often found, while in other cases an absorption line is observed between the yellow and the red which does not seem to correspond with that of the ordinary hemoglobin products and has therefore been called the nitrobenzol-hemoglobin line. The blood contains much smaller amounts of oxygen, in severe cases only 1 per cent instead of 17 per cent."

In cases of nitrobenzene poisoning reported by Stifel [3] (shoe-dye), and by Scott and Hanzlik [17] (denatured alcohol), the blood was chocolate brown and showed methemoglobin by spectroscopic examination. Others [18] have reported negative spectroscopic observations in nitrobenzene poisoning in man. Loeb, Bock and Fritz,[19] reporting two cases in men with nitrobenzene poisoning, found the oxygen capacity of the blood reduced to 6.2 and 8.9 per cent by volume. The red count and total hemoglobin were normal. They did not find methemoglobin by spectroscopic examination.

Similar divergent observations are reported by investigators of experimental nitrobenzene poisoning in various animals. Filehne,[20] working on dogs, was unable to produce methemoglobin with nitrobenzene either in vitro or in vivo. The oxygen combining power, however, of the blood was reduced. The spectrum, although negative for methemoglobin, showed an absorption line between the red and the yellow which they considered to be nitrobenzene-hemoglobin. Mancini and Guidi,[21] working on rabbits, found that the spectroscopic examination of the blood was normal following nitrobenzene intoxication.

Van Slyke and Vollmund [22] found that nitrobenzene in vivo was capable of reducing the oxygen capacity of rabbit's blood but stated that this was probably due to the production of anemia and not to the production of methemoglobin. Working on rabbit's blood in vitro they found that nitrobenzene did not produce methemoglobin.

The following experiments were carried out in our laboratories to determine the effect of nitrobenzene on the bloods of rabbits, rats, guinea-pigs, cats and a dog, in vivo, and on the bloods of these animals and on human blood in vitro. The total hemoglobin was determined by the colorimetric method of Stadie.[23] The oxygen capacity of the blood was determined by the gasometric method of Van Slyke and Stadie.[24] Spectroscopic examination of the blood was carried out in each case.

IN VIVO EXPERIMENTS

1. *Rabbits.* Nitrobenzene was rubbed on the shaven skin or injected subcutaneously (0.25 cc.) in three animals. Approximately after eight hours in each case, the animals became very weak, dyspneic, and died suddenly at the end of about twelve hours. None of the rabbits became cyanotic. The blood withdrawn shortly before death was bright red. The oxygen capacity was normal; the spectroscopic examination did not reveal abnormal lines.

TABLE 1.—*In Vivo Experiments*

Animal	Oxygen Capacity, per Cent by Volume	Total Hemoglobin Hemoglobin, Gm. per 100 Cc. (Stadie)	Combined with Oxygen, Gm. per 100 Cc.	Difference (Methemoglobin)	Spectroscopic Examination (Methemoglobin)	Cyanosis
Cat.....	5.8	8.6	3.8	4.8	4+	Marked
	6.2	10.4	4.6	5.8	4+	Marked
Dog.....	4.2	9.29	3.1	6.1	4+	Marked
Rat.....	6.09	12.4	4.5	7.9	4+	Marked
	5.3	10.7	3.9	6.8	4+	Marked
	3.8	12.5	2.8	9.7	4+	Marked
	5.6	10.2	4.1	6.1	4+	Marked
Guniea-pig..	14.28	10.7	10.6	0.1	Neg.	None
	13.9	10.2	10.3	0.1	Neg.	None
	9.73	7.3	7.25	0.05	Neg.	None
Rabbit.....	17.6	13.2	13.3	0.1	Neg.	None
	17.5	12.9	13.1	0.2	Neg.	None

2. *Rats.* Similar treatment in the case of four rats produced marked cyanosis, dyspnea and weakness in from six to eight hours. Blood was withdrawn shortly before death. In all cases it was dark chocolate reddish brown, and showed a marked reduction of the oxygen capacity, and very definite absorption lines for methemoglobin.

3. *Guinea-Pigs.* In the case of three animals, no change was observed in oxygen capacity or spectroscopic examination when nitrobenzene was injected subcutaneously or rubbed on the skin. The animals became very weak and dyspneic in from six to eight hours but did not become cyanotic. The blood was normal in color.

4. *Cats.* In two cats, one of which received 0.5 cc. of nitrobenzene subcutaneously, the other whose shaven skin was rubbed with nitrobenzene, marked dyspnea, weakness and cyanosis occurred in from eight to twelve hours. Death occurred in from fourteen to eighteen hours. The blood was withdrawn at eight hours. It was dark chocolate reddish brown and showed marked reduction of the oxygen capacity. The spectroscopic examination was markedly positive for methemoglobin.

TABLE 2.—*In Vitro Experiments*

2 Cc. Blood 0.05 Cc. Nitrobenzene	Oxygen Capacity of Control, per Cent by Volume	Oxygen Capacity of Treated Blood After 8 Hours, per Cent by Volume	Oxygen Capacity of Control After 8 Hours, per Cent by Volume	Spectroscopic Examination
Man.....	12.7	12.8	12.6	Negative
Rabbit.....	11.3	11.35	11.25	Negative
Cat.....	13.7	13.6	13.8	Negative
Dog.....	10.4	10.3	10.25	Negative
Guinea-pig....	9.7	9.6	9.8	Negative
Rat.....	11.3	11.2	11.15	Negatvie

5. *Dog.* One cubic centimeter of nitrobenzene was injected subcutaneously in a dog. Marked weakness, dyspnea and cyanosis occurred in from six to eight hours. Death occurred at the end of twenty-four hours. The blood was withdrawn at the end of twelve hours and was very dark chocolate reddish brown. The oxygen capacity was markedly reduced. The spectroscopic examination revealed a very definite methemoglobin line.

IN VITRO EXPERIMENTS

Nitrobenzene, 0.05 cc., was added to 2 cc. of the blood of the foregoing animals and to human blood. The oxygen combining power was determined before the addition of the nitrobenzene and eight hours after the blood had been in contact with nitrobenzene in the ice chest. The results given in table 2 show that no reduction in oxygen capacity occurred. Spectroscopic examination was normal.

16. Cushny, A. R.: Textbook of Pharmacology and Therapeutics, Philadelphia, Lea and Febiger, 1924, p. 510.
17. Scott, R. W., and Hanzlik, P. J.: Poisoning by Alcohol "Denatured" with Nitrobenzene, J. A. M. A. **74**: 100 (April 10) 1920.
18. Huber, A.: Virchows Arch. f. path. Anat. **126**: 240, 1891. Nobécourt, P., and Pichon, E.: Paris méd. **2**: 380 (Nov. 8) 1924.
19. Loeb, R. F.; Bock, A. V., and Fitz, Reginald: Am. J. M. Sc. **161**: 539 (April) 1921.
20. Filehne, quoted by Stone (footnote 2).
21. Mancini, M. A., and Guidi, G.: Arch. internat. de pharmacol. **24**: 247, 1922.
22. Van Slyke, D. S., and Vollmund, E.: J. Biol. Chem. **66**: 415 (Dec.) 1925.
23. Stadie, W. C.: J. Biol. Chem. **41**: 237 (Feb.) 1920.
24. Van Slyke, D. D., and Stadie, W. C.: J. Biol. Chem. **49**: 1 (Nov.) 1921.

COMMENT

It seems from these results that the tendency for nitrobenzene to form methemoglobin depends on the species of animal. It is interesting to note that the carnivorous animals (dog, cat and rat), showed methemoglobin formation. The herbivorous animals (rabbit and guinea-pig) did not produce methemoglobin or become cyanotic with nitrobenzene poisoning although showing as marked toxic symptoms as the carnivorous animals.

Huebner,[25] experimenting with different animals, found that he could produce methemoglobin in cats by means of phenacetin but was unable to produce methemoglobin by this means in rabbits. It has apparently been shown, however, that methemoglobin can be produced by phenylhydroxyalanine [26] in rabbits.

SUMMARY

1. A child, aged 2 years, poisoned by shoe-dye (nitrobenzene), recovered.

2. Nitrobenzene in vivo produced methemoglobin in a dog, cats and rats.

3. Nitrobenzene in vivo did not produce methemoglobin in guinea-pigs and rabbits.

4. Nitrobenzene in vitro did not produce methemoglobin or reduce the oxygen combining power of the blood of cats, rats, a dog, guinea-pigs, rabbits and man.

PATHOLOGIC CHANGES IN THE FAUCIAL TONSILS

STATISTICAL REPORT *

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In Kansas City, which may be considered a typical American city, during the month of May, a typical month so far as tonsil operations are concerned, a total number of 861 surgical operations was listed by the Kansas City Clinical Society for the hospitals of Greater Kansas City. Of these, 406 were tonsillectomies. This number does not include operations done in the offices, dispensaries, and at home.

In the Alfred Benjamin Dispensary, a typical dispensary of the city, 1,000 faucial tonsils were excised and examined within the past two years.

Bacteriologic studies were found futile because every variety of organism that gained access to the mouth or throat could be demonstrated. Histologic studies were not done as a routine because thoroughness demanded examination of every bit of each field in serial sections of each tonsil. However, microscopic studies were made of every gross lesion in which it seemed that further evidence might thus be obtained. This applied especially to lesions in which tuberculosis, actinomycosis and syphilis were suspected. In the statistics recorded, it is not only possible but probable that minute tuberculous lesions were overlooked.[1]

Routine examination consisted of inspection of the exposed tonsil surfaces and of surfaces made by cutting serially with a sharp scalpel, each cut as close as possible to the preceding one. The cryptic contents and linings were also examined.

In the 1,000 faucial tonsils, there were found two tuberculous lesions (0.2 per cent), and one malignant (0.1 per cent) and one nonmalignant papillomatous lesion (0.1 per cent).[2] There was no evidence of actinomycosis, syphilis or angiomas.

Of the tonsils examined, 43 per cent did not reveal any evidence of gross change whatever, and 28 per cent were not altered except for cheesey cryptic concretions (so-called chronic cryptic catarrhal tonsillitis). According to Weller,[3] Swain,[4] Davis [5] and Kellert,[6] all faucial tonsils will at some time contain concretions,

Observations in Excised Tonsils *

Age	No. of Tonsils Examined	Not Changed		Scarred		Concretions		Abscessed and Ulcerated	
		No.	%	No.	%	No.	%	No.	%
2	2	2	100	..	..	..	..	..	..
3	14	6	43	2	14	6	43	..	..
4	34	20	59	4	12	10	30	..	..
5	64	26	40	14	22	26	40	2	..
6	60	34	57	4	7	22	33	6	..
7	56	26	46	10	18	18	32	2	..
8	136	56	41	16	12	64	49	14	10
9	104	46	44	16	16	50	49	4	..
10	88	46	52	20	23	26	30	8	..
11	54	34	63	6	11	20	37	6	..
12	90	46	51	6	7	40	44	..	..
13	30	10	33	10	30	12	40	4	..
14	56	18	32	12	21	28	50	8	..
15	24	12	50	2	8	8	33	..	..
16	16	2	12	4	25	12	75	2	..
17	14	2	14	8	57	6	42	..	..
18	24	6	25	8	33	6	25	..	..
19	10	8	80	..	..	2	20	..	..
20	4	..	..	2	50	4	100	2	..
21	10	6	60	2	20	4	40	..	..
22	12	2	16	4	30	6	50	..	..
23	4	..	..	4	100	2	50	..	..
24	2	..	..	2	100	2	100	..	..
25	4	2	50	..	..	2	50	..	..
26	4	2	50	2	50	..	..	..	..
27	4	2	50	2	50	..	..	..	..
28	2	2	100	..	..	..	..	..	..
29	2	..	..	2	100	2	100	..	..
30	4	..	..	2	50	2	50	..	..
31	2	..	..	2	100	2	100	..	..
32	10	..	..	6	60	2	20	..	..
33	6	2	33	4	66	..	..	..	..
34	4	..	..	4	100	..	..	..	..
35	2	..	..	..	..	2	100	..	..
36	6	2	33	4	66	..	..	..	..
37	6	2	33	4	66	..	..	..	..
38	14	2	14	6	43	4	29	4	..
39	2	2	100	..	..	..	..	..	..
40	2	..	..	2	100	..	..	..	..
41	4	..	..	2	50	2	50	4	..
42	4	2	50	2	50	..	..	..	..
44	2	..	..	2	100	2	100	..	..
45	2	..	..	2	100	..	..	..	..
47	2	..	..	2	100	2	100	2	..
50	2	2	100	..	..	..	..	..	..
52	2	..	..	2	100	..	..	..	..
Totals	1,000	428	43	208	20	370†	38	68	7

* Compare with table presented by Nuzum, F. R.: California State J. Med. **20**: 237 (July) 1922.

† Of the 376 with concretions, fifty-four were scarred and thirty-eight ulcerated. Thus 284 were not changed except for concretions. This, together with the 428 absolutely unchanged, is 712, or 71 per cent of all pairs examined that had never been seriously affected.

and since such a condition is not to be considered as evidence of serious disease there were thus 71 per cent of all tonsils examined that had never been seriously affected.

Only 7 per cent of all the tonsils examined were ulcerated or contained true abscesses, and if this change is taken as a true criterion of focal disease of the tonsils, then 93 per cent of the tonsils were not seriously affected. The apparent discrepancy between this figure, 93 per cent not seriously affected, and the abovementioned 71 per cent never seriously affected is

25. Huebner, L.: Arch. f. exper. Path. u. Pharmakol. **35**: 401, 1895.
26. Lewin, L.: Arch. f. exper. Path. u. Pharmakol. **35**: 401, 1895.

* From the Alfred Benjamin Dispensary.

1. Harbitz, F.: Untersuchungen über die Häufigkeit, Lokalization und Ausbreitungswege der Tuberkulöse, Christiania, 1905, quoted by Oftendal, S.: Journal-Lancet **37**: 570 (Sept. 1) 1917. Mitchell, A. P.: Tuberculosis of the Faucial Tonsils in Children, J. Path. & Bacteriol. **21**: 248 (April) 1917.

2. Morris, A. G.: Clinical and Pathologic Study of Tonsil Cases, Ann. Otol., Rhin. & Laryng. **32**: 864 (Sept.) 1923.
3. Weller, C. V.: Ann. Otol., Rhin. & Laryng. **33**: 79 (March) 1924.
4. Swain, H. L.: Facts and Fancies about Tonsils, M. Rec. **93**: 1069 (June 22) 1918.
5. Davis, J. E.: Pathology of the Tonsil, Ann. Otol. Rhin. & Laryng. **33**: 657 (Sept.) 1924.
6. Kellert, E.: Pathologic Histology of Tonsils Containing Hemolytic Streptococci, J. M. Research **4**: 387 (May) 1920.

accounted for by 22 per cent of the tonsils that were scarred. Scars are evidence of previous serious infection that has cleared up ("chronic fibrous follicular tonsillitis and fibrous peritonsillitis," a misnomer).

Large pieces of muscle were attached to 13.9 per cent of the tonsils examined.[7]

The accompanying table gives in detail the number of tonsils examined for each age, the type, number and percentage of changes for each age, and the number and percentage of changes collectively.

It was interesting to note while compiling the statistics given in the table that the greatest proportion of nonchanged tonsils was obtained in September, the opening of the school year, and in June, the opening of the summer camps. When several pairs of tonsils were removed on the same day from different members of the same family, one pair usually bore evidence of infection and the others were not altered.

A good summary of the literature to date is furnished by Weller,[3] and good histopathologic studies by Oftendal,[8] Davis [5] and Mitchell.[1]

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COUNTY HEALTH WORK

A CRITICAL ANALYSIS *

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A critical analysis of county health work among other things develops the following thoughts:

First, the undertaking is so recent that it is admittedly an infant not yet out of its swaddling clothes. The work began in 1911. The year ended with no more than two counties undertaking it. In 1912 only four counties were organized. It has been only fifteen years since the pioneers blazed the trail. The year 1927 finds more than 300 counties with whole-time health organizations. The necessity for the work has long been apparent. The feasibility of the work has been proved. The appraisal of the work shows assets so far in excess of liabilities that its permanence is universally admitted. The wide dissemination of health education, the realization of the value of a man as a productive machine, the expense attached to the development of a new-born baby into a productive human being, have been so clearly brought to the attention of industry, sociology and economics that the science of physical protection of man is assured. Preventive medicine has, by its own accomplishments, so satisfactorily demonstrated its economic value that civilization will not let it go.

Second, while the aims and purposes of county health work do not differ in any way from health work in municipalities, its distinctive rural environment makes it a distinctive undertaking dependent on distinctive plans of administration, which, to be successful, should be formulated with due regard to rural citizenship, rural organization and the county's ability to finance rural undertakings.

There are seven million farmers, who, with their families, comprise a citizenship of more than thirty million. These people are divided into three classes: the landowner, the negro laborer and negro tenant, and the white laborer and white tenant. It is admitted that the landowner dominates rural life, sets its standards and measures its progress so far as conditions will permit. This class is a sturdy, relatively independent class, comparing favorably with the rest of society so far as domestic life and hygienic living are concerned. The negro laborer and tenant class is shiftless, improvident, without initiative, and, from a public health standpoint, without organization. It is that class which leaves the summertime to God and the wintertime to you. The white laborer and tenant class is also improvident, made up largely of nonprogressives, the flotsam and jetsam of rural life. One cannot portray the manner of living of this particular type more clearly than by quoting a paragraph on rural life from the pen of Nell Battle Lewis, the daughter of the sainted Richard H. Lewis, one of this country's outstanding pioneers in public health work. Nell Battle Lewis pictures a light breeze stealing through the pines surrounding a dilapidated two room farm house:

> A woman carrying water from a well across a yard as bare as a board stops to let the breeze fan her sweating face. She is dog-tired. The sweltering August day began for her at sunrise and this first breath of evening is a welcome promise of relief. Putting down her bucket she sinks on the door-step, pushing back her straggling hair. She is a woman whose youth has been prematurely worn away. She wears an ill-fitting cotton dress of a color made indistinguishable by much rough washing. At 17 she married a tenant farmer and has paid for it with eight children and twelve years of drudgery. The last baby, fretful from the heat, is mewling on the floor beside the sagging door. From farm to farm the family has moved their household goods, carried by hand. Sometimes they've made a good crop, oftener they've failed, but good crop or bad, there has never been money for more than the barest support of life. The woman looks up at the pines. Pretty—those pines—she thinks—pretty when they are black against an orange winter sunset—pretty glistening green in the clear soft sunlight fall mornings, and with stars glittering through their branches. When too exhausted to think or talk she sits on the step at night after the children are asleep. When the pines whisper in the wind they speak to her mysteriously. She has never quite caught their meaning, but their whispering makes her wonder whether life was meant to be so hopeless, and so hard. A fragment of a gospel hymn comes to her mind. She will go to the revival next month at Shiloh Church in the grove up the road. She will take the little children. She remembers the last revival at Shiloh. How the preacher thundered! What a picture of hell with its eternal torment he painted, of heaven with its riches and everlasting rest! No wonder the sinners trembled and wept and the redeemed leaped and shouted for joy! In preparation for the coming revival the trees along the country roads show crudely painted sign-boards nailed to them: "Heaven or Hell for Eternity," "Ye Must Be Born Again," "Christ Died for Us." She finds her religion in the blessed Book. She cannot read but the preachers have told her. It shows you the way to the sweet fields, and to the tree of life and to rest. Only the Book shows the way.

The three types mentioned cover a territory scattered all over the United States. Their capital, brains and labor produce the necessities of life for which the consumer pays twenty billions of dollars a year. They have their problems of labor, production, storage, marketing and credits; problems of competition, exports and imports and tariffs; problems relating to the elimination of waste, production cost and the thousand and one problems entering into the industrialism of agriculture; lastly comes the important problem of stabilization of lands and land values. Farmers are watching the driving of intelligent and ambitious youth from country to city. They are faced with the problem of

7. Israel, S. A.: Microscopic Study of the Excised Tonsil, Ann. Otol. Rhin. & Laryng. 34: 79 (March) 1925.
8. Oftendal, cited by Harbitz (footnote 1).

* Read before the Section on Preventive and Industrial Medicine and Public Health at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 19, 1927.

the maintenance of a balance between world industry, world raw material and world food, all of which enters into a correct analysis of county health work.

Agriculture is the oldest of all callings but it has yet to bring forth a man or commission of men capable of putting agriculture, the real bed-rock of existence, on a business basis. Health workers need to look this fact squarely in the face, accept it and govern themselves accordingly. They need to realize that agriculture shows a profit to everybody except the farmer and that the general profit coming from this calling, as well as the profit coming to the farmer himself, depends largely on the improvement of rural physical citizenship. Productiveness coming from human machines makes the physical perfection of man so important that statesmen and business men who devise ways and means for financing the welfare of humanity *en masse* need to be shown the necessity for some kind of an equalization fund to finance and further rural health work in those counties which cannot finance themselves.

Third, to expand sufficiently to meet rural health needs, medical education should devise ways and means to prepare physicians in the future to practice the specialty of public health more capably. Rural health work is more or less a dead thing until trained physicians and other trained health workers are made available at adequate salaries. If the United States would strengthen and organize agriculture it should arrange a plan by which medical colleges could immediately place no less than ten thousand graduate physicians trained in health work, thirty thousand trained sanitary inspectors, and fifty thousand public health nurses in rural communities. Fifteen per cent of the medical graduates in the United States should be absorbed every year in county health work. Medical schools should begin now to teach the practice of preventive medicine to the entire student body. Every state where medical colleges exist should arrange a system of teaching by which a department of preventive medicine and public health could be perfected. This department should be in such close touch with the entire curriculum of medical education that it would inoculate the prevention of disease into the warp and woof of medical education sufficient to make the prevention of disease the consummation most devoutly to be aspired to by men of medicine regardless of place or specialty. Medical colleges should make contact with state boards of health whereby men who are interested in the specialty of public health can be given actual training by doing the thing itself. Specialists in other lines cannot become proficient until they receive practical special training. The surgeon does not dare announce to his confrères and the public that he is specializing in surgery until he has trained himself to practice the art and science of his specialty in a proficient way. The technic necessary to the specialty of county health work is a technic as distinctively and peculiarly its own as is the techcnic of the oculist, the neurologist or the pediatrician. The plan of medical education should be perfected for the purpose of engaging the attention and assistance in preventive medicine of the practicing physician in rural communities. Such physicians are forced by environment and isolation to cover the field of medicine as best they can, so far as the meeting of immediate emergencies, acute diseases and diagnosis is concerned. The fact that emergencies come without warning, without regard to time or place, makes it imperative that physicians in rural districts should have office nurses trained to give assistance which technicians give to hospitals, trained nurses to medical, surgical and obstetric clinics as well as to the clinics of the pediatrician. The office nurse for the rural physician should be popularized. Boards of health could add nothing to their present plan of prevention of disease which would show more immediate and more satisfactory results than the institution of training schools for nurses whose specialty would be to give assistance to the physicians in rural districts who are practicing general medicine.

Lastly, extension courses by medical colleges for the purpose of bringing special training to the very doors of the rural physicians themselves in isolated communities would prove of untold benefit in the development of county health work. Lectures and clinics by itinerant teachers in the small towns and country communities to which the local profession could be invited and in which the early diagnosis and prevention of disease could be taught and stressed would mean much to the furtherance of county health work and to the attractiveness and safety of rural life.

ABSTRACT OF DISCUSSION

DR. E. A. HINES, Seneca, S. C.: Dr. Laughinghouse very aptly brought out the necessity for something further to be done by the medical school with reference to preventive medicine. April 19, the State Medical Society of South Carolina requested the Medical College of the State of South Carolina to open its doors to the profession of the state. April 28, the board of trustees met and agreed to open the state medical college twice a year for postgraduate courses for the profession of South Carolina. The president of the state medical society has brought forward to the profession of the state the question of periodic health examination as being his slogan for the coming year, to which the other officers have agreed. In addition to the postgraduate courses for medicine and surgery in general, the state medical society officers have interested the college to put on courses that will tend toward the instruction of the physicians as to the proper methods of making health examinations. May 25 fifty of the leading physicians of the state will be called to the state capital, and with the president of the state society, members of the state board of health, and members of the medical college an extensive plan will be inaugurated to the end that speakers will be sent to every county medical society and every district medical society in the state to demonstrate the technic of health examinations. These speakers will go before every service club, every woman's organization, every organization that should be interested, as far as possible, in bringing to the attention of the public of South Carolina the necessity for these health examinations. The service will of course extend throughout the rural districts and the smaller communities in which it is very greatly needed, as stressed by Dr. Laughinghouse.

DR. JOHN A. FERRELL, New York: Dr. Laughinghouse has covered the field of public health so thoroughly that very little is left for me to say except that I concur with the views expressed. It is gratifying to learn that Dr. Laughinghouse has inaugurated plans for more thorough and practical training of the personnel.

The people of the poor counties to which Dr. Laughinghouse refers are citizens of the United States. Although they are occupying sparsely settled areas, it would be against the best interest of the state and nation to have them abandoned. Important food and raw material supplies would be lost. The number of consumers would be diminished. Yet, unless the efforts of the people in these sparsely settled counties are supplemented, this will occur. If wealthy communities have good schools, health service, roads, etc., the people from the poor communities will move to them unless state and national governments aid them as far as necessary to have creditable facilities. If we abandon our farm communities we shall become dependent on foreign nations for raw materials, food supplies and consump-

tion of our products. This will lead the industrial worker, who has been exceptionally favored during recent years, to compete with the cheap labor of Europe and the Orient, and his favorable conditions of today will be temporary. We have boasted of being a self-contained nation. If we want this condition to prevail, the nation must find out what its responsibility is to these sparsely settled communities. The urban and industrial community must find out where their interests lie. The state, likewise, must meet its responsibility. Unless reasonably adequate standards are established in the fields of education and health in farming and other sparsely settled areas, we cannot expect people to remain in them at the enormous disadvantage. The standard must be much higher than it is now.

DR. J. A. HAYNE, Columbia, S. C.: When I heard Dr. Laughinghouse describe the life of the farm woman, I could not help but let my memory go back to the days when I lived on a farm, to the days when the picture he drew was absolutely true. But then we must remember that this farm woman sat on her doorstep and could listen to the whisper of the pines, that she also had jewels in her crown; that perhaps the woman who sits in the steam-heated flat cannot hear the whisper of the pines and has no jewels in her crown. As to the part about the education of physicians, about nine years ago I conceived the idea that it was only right and proper that medical students should have some idea of what their relationship to the general public would be when they graduated. I knew they were taught everything in regard to curative medicine; they knew how to perform operations; they knew all about metabolism; they knew all about laboratory science, but they knew very little about the science of sociology; what their relationship with the public was going to be. Therefore I commenced to give lectures on public health administration to the senior class at the medical college. I outlined the functions of the United States Public Health Service, of the state departments of health, of municipal departments of health, telling them what was meant by the registration of vital statistics; why they were called on to register births and deaths; what it meant to the public to report communicable disease; why it was an obligation on the profession to do these things. I have found that those students who went into practice in South Carolina are willing and ready to aid the public by making these reports, whereas those who graduated many years ago seem to think that the only business of medicine is to make money. We whose heads are getting gray and whose hair is getting thinner, who are becoming feeble, whose candles are gradually being snuffed out, first love, then faith, then courage, then ambition, have but one candle that is still left lit, and that is the candle of hope. Having heard these addresses, I feel that we have a right to keep the candle still burning, and that the medical profession will at some future date realize that it is a profession, and that it owes certain duties to the public.

The Aquatic Origin of Man.—There is good evidence that man is derived from aquatic ancestors; the stages he passes through before becoming fit to be born indicate this. . . . When an ovum enters the uterus, the overgrown uterine decidua on which it rests secretes a fluid for its nourishment. Fluid accumulates in the amnionic cavity and in due course the embryo disports itself actively as an aquatic creature in its own amnionic pool. In the early stage its skin is covered by a single layer of cells. Later this becomes double and the superficial layer is known as the epitrichium. About the eighth month of intra-uterine life the epitrichium is cast off mixed with grease from the skin-glands and the delicate hairs known as lanugo. This soapy stuff is the vernix caseosa so conspicuous on the skin of the new-born child. The epitrichium persists on aquatic creatures such as frogs and salamanders and protects their skin from maceration. When the human fetus, as an aquatic creature, disports itself in the amnionic hydrosphere, the epitrichium and vernix caseosa protect it from maceration. . . . The human fetus is an aquatic mammal, its blood being oxygenated by its mother's blood by means of the placenta. At birth it is expelled from the uterus, discards the placenta, and becomes a lung-breathing creature.—John Bland-Sutton, Bionomics of Animal Reproduction, *Lancet*, Oct. 8, 1927.

"THE ABDOMINAL PAIN OF THROAT INFECTIONS IN CHILDREN," AND APPENDICITIS*

JOSEPH BRENNEMANN, M.D.
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Six years ago I[1] reported some observations and impressions on the occurrence of a peculiar abdominal pain, or pains, in the course of throat infections in children. Although the paper did not elicit any comment at that time, the symptom complex then described has since attracted rather wide interest and has entered fairly extensively into the recent literature on abdominal conditions, accompanied by pain, in children. I am more than ever convinced that this pain, which is of little, if any, therapeutic or prognostic interest, is of great importance in the differential diagnosis of abdominal conditions in children when pain is a cardinal symptom. Of these, appendicitis is obviously the most important in this connection. Since writing that paper and others,[2] it has been my unhappy experience on a number of occasions to see the diagnosis of appendicitis discounted, or even excluded, because the patient had a throat infection at the time. Because of a certain feeling of responsibility in the matter, I have felt justified in once more calling attention, very briefly, to this symptom, and in reporting the further impressions gained in another six years. Even more, however, I am interested in presenting evidence that would seem to point to the fact that appendicitis itself must be included among the complications that may arise in the course of these infections that have their starting point in the nose and throat. The cumbersome title of the present paper was purposely so constructed that the medical man, who frequently reads only titles, would have before him in intimate simultaneous association the three concepts: "abdominal pain," "throat infection," "appendicitis," in the hope that, if confronted by a possible case of appendicitis, he will lean toward rather than away from that diagnosis if the patient has at the same time an upper respiratory tract infection; or, at least, that he will make his diagnosis wholly regardless of that association.

By "throat infections" I mean, of course, that whole group of nonspecific, sporadic, endemic, epidemic, pandemic, febrile infections that have their primary locus in the nose and throat and are variously called tonsillitis, pharyngitis, nasopharyngitis, sore throat, cold, bronchitis, upper respiratory tract infection, angina, glandular fever, grip, or influenza.

During the course of such infections abdominal pain is a frequent symptom, often the outstanding, or only, subjective symptom. I have described this condition elsewhere[1] in detail, and will here record only my present impressions concerning this symptom. There are, apparently, two fairly distinct types of pain in this connection that may, but probably do not, have a common point of immediate origin. The first, most frequent and most characteristic pain usually occurs early in the disease, is commonly intermittent, paroxysmal or colicky, may be very slight or very severe, is accompanied by little or no tenderness either at the

* From the Children's Memorial Hospital, Chicago.
* Read before the American Pediatric Society, Chesapeake Bay, May 14, 1927.

1. Brennemann, Joseph: The Abdominal Pain of Throat Infections, Am. J. Dis. Child. **22**: 493-499 (Nov.) 1921.
2. Brennemann, Joseph: The Clinical Significance of Abdominal Pain in Children, Surg. Gynec. Obst. **34**: 344-350 (March) 1922; Throat Infections in Children, Arch. Pediat. **42**: 145 (March) 1925.

point of pain or elsewhere, and *is practically always referred to the region of the umbilicus, nearly always, if the patient is questioned closely, to the umbilicus itself*. This pain has to my mind many of the earmarks of the "referred" type of pain so familiar in pneumonia, biliary and renal colic, Pott's disease and appendicitis. It is hard to explain on any other basis its neuritic quality, its nearly constant localization at the umbilicus, the relative freedom from tenderness, and the usual appearance at the very beginning of the primary infection. It is equally hard, with our present knowledge and theories concerning the genesis of "referred" pains, to route such a pain in the present instance. Practically, this leaves us indifferent; theoretically, it is to me the most interesting phase of the whole subject.

The second type of pain is less sharply defined. It is commonly less severe and sharp than the former; it may be fairly constant, but much more often it is intermittent—there may be paroxysms of considerable severity. It may be localized nearly anywhere in the abdomen, though most frequently it occurs in the umbilical region or on the right side, and then more often in the lower right quadrant. There is nearly always an accompanying tenderness, which is sometimes more, sometimes less marked than the pain itself, and may or may not be in the same location. In a recent case that proved not to be one of appendicitis at operation, there was at first a great deal of pain a little to the right of McBurney's point and exquisite tenderness, throughout the illness, near the spine. The only pathologic change was a marked mesenteric lymphadenitis in the ileocecal region. In this type of pain we naturally turn to such a mesenteric lymphadenitis as the source, and readily find a mass of evidence. Struthers,[3] Freeman,[4] and Hutchison [5] have all recently emphasized the role of mesenteric lymphadenitis in the causation of abdominal pain in children, though none of them have related the condition to these infections as the primary cause. Such an adenitis can best explain the associated tenderness which is probably the chief factor even in the apparently spontaneous pain, as in acutely inflamed glands anywhere, here due to peristalsis and gas; the predominance of pain about the center of the abdomen and the lower right quadrant, which seems a favored region; the occasional persistence of pain and tenderness long after the primary infection has apparently ceased to be active, and the fact that the pain and tenderness may, or may not, be in the same place. More direct evidence is furnished from the occasional palpability of such glands in the lower part of the abdomen, again, especially on the right side; from necropsies in analogous cases of influenza during the recent pandemic, in which most extensive lymphadenitis was a frequent finding; and, even more direct, from the occurrence of such glands in patients on whom a laparotomy was performed in which the operation was either frankly exploratory or frankly based on a wrong diagnosis of appendicitis or peritonitis. Whether a mesenteric lymphadenitis is due to a blood stream infection or to an intermediary enteric infection from bacteria that have been swallowed from the throat need not concern us at the present time. Both hypotheses are inviting and both encounter serious objections. It should be emphasized that both these pains occur wholly independently of an evident gastroenteritis, and neither of them is in any way a measure of the severity of the primary infection.

If the symptomatology that I have outlined is even approximately true, it becomes evident that the differential diagnosis between this condition and appendicitis or peritonitis is not always a care-free undertaking. Practically, it is the cause of more acute worry to me than any other thing in medicine. The delay resulting from a mistake, or even from uncertainty, may be fatal.

This difficulty reaches its highest point in the case of the patient with a marked pathologic distention of the abdomen, commonly with pain, tenderness and rigidity, without decisive localization—the kind of distention that makes one feel anxious to have a surgeon close at hand to share the responsibility. During February and March of this year there was a sort of epidemic of such abdominal distention in children, in Chicago, during the course of an epidemic of throat infections of which they were unquestionably a part. Some of these cases were relatively mild, but very disturbing to one's peace of mind. Several of these children were moribund when I first saw them in consultation, and one could only guess at the pathologic changes along evident lines. During the same time, I saw many more children with appendicitis than I have seen before in a like period of time, most of them with an unmistakable throat infection. The manner in which these cases were intimately intermingled with the others left little doubt that they were all part of one clinical picture and had a common starting point in an inflamed throat.

This brings me to the main point of my present thesis. I have for years been convinced that many cases of appendicitis in children occur during, and as a complication of, or a sequel to, an infection in the throat. For fear of creating the impression that I might be riding a hobby, perhaps the chief medical sport in all ages, I have been especially cautious about making such deductions, and even more cautious about expressing them, especially in writing. I have recently gone over the histories in about thirty-five cases of appendicitis in which operation has been performed at the Children's Memorial Hospital in the last two years. Of these, 17 per cent unquestionably occurred during the course of very evident throat infections. At least an equal number were suggestive. I was impressed, as every pediatrician would be, with the utter lack of value of statistics based on such hospital records unless each case has been especially studied from that standpoint by an interested and experienced observer. In the presence of a serious abdominal surgical emergency, an intern and a surgeon would probably not waste much time on the throat; and the history of a preceding throat infection, which Evans considers of greater importance than a simultaneous occurrence, would hardly seem worth mentioning by the anxious parents. Besides, it takes many years to know how to evaluate a throat. Such statistics are of value only as a record of minimal incidence.

Far more convincing than such statistics is the impression one gets when one sees this association of the two conditions as frequently as one does in private practice, where one comes into more intimate personal contact with all the factors that enter into a case. Of the last ten patients with appendicitis whom I have seen in private practice, since I have been more intensively interested in this subject, nine had a definite throat infection; the tenth I am uncertain about. Six of these I was asked to see in consultation because they had an evident throat infection with abdominal symp-

3. Struthers, J. W.: Mesenteric Lymphadenitis Simulating Appendicitis, Edinburgh M. J. **27**: 22 (July) 1921.
4. Freeman, Leonard: Surgical Significance of Mesenteric Lymphadenitis, Surg. Gynec. Obst. **37**: 149 (Aug.) 1923.
5. Hutchison, R.: Diagnostic Significance of Abdominal Pain, Brit. M. J. **1**: 1 (Jan. 1) 1921.

toms, and I was asked to help in deciding whether there was an appendicitis or the more frequent abdominal symptoms that occur with such infections. Four of these six had gangrenous appendixes. The fifth I did not think had appendicitis, but the surgeon removed an "injected" appendix on the following day. The sixth had a definite mild involvement. Of the remaining three patients with definite throat infection, two had gangrenous appendixes at operation. The third had one of those prolonged upper respiratory tract infections, and the appendix was removed before I saw the child. It was said to have been "not bad at all," and its removal did not influence the fatal septic course of the disease. The evidence in all these cases was not of the questionable kind. One child had a very sore throat, discharging ears, marked bronchitis, and then an appendicitis; another a throat infection, otitis media, a mastoid operation, four or five days later, and appendicitis; a third, a very bad throat, pneumonia, a ruptured appendix and peritonitis, all confirmed at autopsy; a fourth, a sore throat, otitis media and bronchitis; a fifth, a simple cold with a large cold sore, a few days before the onset of appendicitis. Even from so small a number of cases the conclusions would seem warranted that the two conditions are frequently associated and probably causally related, and that the differential diagnosis between appendicitis and a perfectly innocuous abdominal condition occurring with throat infections is not always easy, sometimes even after operation.

I have recently for the first time reviewed some of the literature bearing on this phase of the subject. Pediatric textbooks, as more or less complete compilations of knowledge and theory on the subjects treated, ought to give a fair cross section of the pediatric status of that subject, though often, necessarily, somewhat in arrears. Of some twenty-two leading pediatric textbooks in my library, only seven mentioned these infections as a possible cause of appendicitis. In the symposium on appendicitis at the 1924 session of the American Medical Association, it was mentioned by only one speaker (Bolling).[6] Feer[7] reports a simultaneous occurrence of tonsillitis and adenoiditis with appendicitis in 7.5 per cent of his cases; Richter,[8] in 4.06 per cent of 172 cases, or, if focal infections of the tonsils, cervical glands, teeth and ears, are included, in 28.47 per cent.

That cases of appendicitis may occur in greatly increased numbers during epidemics of grippal infections is stated, and in some instances substantiated by competent evidence, by Feer,[7] Haushalter,[9] Richter,[8] Gioseffi,[10] Evans,[11] Hood,[12] Mantle,[13] Martin,[14] Marvel,[15] Rostouzow,[16] Wahle[17] and others. Gioseffi[10] reported an epidemic of ten or eleven cases occurring in the little town of Parenzo, with less than 4,000 inhabitants, within a period of two months (March and April, 1923) all confirmed by operation and all associated with a nasopharyngitis that was epidemic at the time. All the patients were between 20 and 30 years of age except one baby and one adult of 50 years.

Among recent contributions to this phase of the subject, that of Evans[11] of the University Clinic at Madison is the most extensive and perhaps the most convincing, both because of the mass of material and the scientific control under which it was developed. At the University of Wisconsin the students are treated medically at a university clinic organized for that purpose, and are therefore under guinea-pig-like control in a statistical study of this kind. Evans' report is based on the incidence of appendicitis and of "pyogenic infections of the upper respiratory tract" among 16,000 students who attended the university during the period from February, 1910, to June, 1916. During this period of six and one-third years, or fifty-nine school months, there were 236 cases of acute appendicitis, an average of four cases a month, or one in seven and one-half days. During this time there were eight distinct periods of marked simultaneous increase above the average, or expectant, rate of both appendicitis and upper respiratory tract infections. Instead of an average of four cases a month, the incidence in successive periods of simultaneous increase rose to eight cases in fourteen days; six cases in thirteen days; thirteen cases in thirty-two days; twenty-seven cases in fifty-two days; twenty-one cases in forty-three days; fourteen cases in twenty-four days, and eighteen cases in twenty-six days. In other words, there were 113 cases of appendicitis in 226 epidemic days, as compared with 113 cases in about 1,600 nonepidemic days, or about eight times as many in the same number of days. Evans states that 86 per cent of the total number of cases of appendicitis showed a "demonstrable primary upper respiratory tract infection." In the group of 113 cases occurring during the eight epidemic periods, the incidence of throat infections rose to 93 per cent. That there is a greater "tropism" for the appendix during epidemic periods Evans thinks is further shown by the fact that of the total number of students who reported to the clinic for upper respiratory tract infections, only 1.5 per cent developed appendicitis, as compared with 3 to 3.5 per cent of those so reporting during periods of increased frequency.

There is one thing in the evidence presented by Evans that may be a weak point, or a strong one, depending on future developments. He stresses the fact that appendicitis is apt to occur just after rather than during an upper respiratory tract infection. Thus, in the total series, the primary respiratory infection preceded the acute appendical attack by an average of sixteen days (from one to sixty days), while during epidemic periods, the average was cut down to eight days. He reasons, and cites Billings[18] and Rosenow[19] in support of his view, that "metastasis from such pyogenic foci takes place when the organisms have lost a certain degree of virulence due to the focalizing processes at the original point of entrance."

Theoretically, it is not hard to believe that bacteria that have an affinity for the tonsils would find along

6. Bolling, R. W.: Acute Appendicitis in Children, J. A. M. A. **82:** 963 (Sept. 27) 1924.
7. Feer, E., in Pfaundler and Schlossmann: Handbuch der Kinderheilkunde, ed. 3, p. 274.
8. Richter, H. M., in Abt's Pediatrics, p. 558.
9. Haushalter: La pratique des maladies des enfants.
10. Gioseffi, M.: Influenza and Appendicitis, Riforma med. **39:** 561 (June 11) 1923.
11. Evans, J. S.: Epidemiology of Acute Appendicitis in Relation to Acute Nasal and Tonsillar Infections, Wisconsin M. J. **17:** 3 (Aug.) 1918.
12. Hood, D. W. C.: Is Appendicitis Contagious? Lancet **1:** 1645, 1910.
13. Mantle, A.: Is Appendicitis Contagious? Lancet **2:** 57, 1910.
14. Martin, E. A.: Epidemologisches, zu Appendizitis, München. med. Wchnschr. **58:** 2005, 1912.
15. Marvel, Philip: Has Influenza Been a Causative Factor in the Increase of Appendicitis? J. A. M. A. **43:** 313 (July 30) 1904.
16. Rostouzow, M. I.: Ueber die epidemische Natur der Perityphlitis und deren Beziehungen zu Influenza und anderen Infektionskrankheiten, Mitt. a. d. Grenzgb. d. Med. u. Chir. **15:** 564, 1905-1906.
17. Wahle, S.: Epidemiologisches zur Perityphlitis, München. med. Wchnschr. **59:** 1438, 1912.
18. Billings, Frank: Focal Infection, J. A. M. A. **63:** 899 (Sept. 12) 1914.
19. Rosenow, E. C.: Elective Localization of Streptococci, J. A. M. A. **65:** 1687 (Nov. 13) 1915; The Bacteriology of Appendicitis and Its Production by Intravenous Injection of Streptococci and Colon Bacilli, J. Infect. Dis. **16:** 240, 1915; Pathogenesis of Spontaneous and Experimental Appendicitis, Ulcer of the Stomach and Cholecystitis, J. Indiana M. A. **8:** 458, 1915.

either or both of two obvious but disputed routes a receptive soil in the very similar lymphoid tissues of the appendix. This similarity is emphasized by many writers. Thus, Feer [7] refers to an excess of appendical lymphoid tissue in "lymphatic" children, and sees in this an explanation for a greater incidence of appendicitis in children with hyperplasia of the lymphoid tissue of the throat and nasopharynx. Kerley [20] and others speak of the appendix as the "abdominal tonsil," while Kassowitz [21] thought of it as a "tubular, invaginated tonsil" or "the appendical tonsil (Wurmfortsatz Tonsille)." Kretz [22] and Adrian [23] looked on appendicitis as an "angina of the appendix," a localization of a blood stream infection that had its "origin in an acute angina, especially in a streptococcus tonsillitis." Adrian was able to produce appendicitis in rabbits by the intravenous injection of streptococci, staphylococci, typhoid bacilli, pneumococci and colon bacilli. Poynton and Payne [24] produced in a rabbit a typical appendicitis, without any other abdominal lesion, by the intravenous injection of a streptococcus isolated from the throat of a girl, aged 15, who had both a follicular tonsillitis and a "large swollen appendix covered with fibrinoplastic exudate," from the two of which an identical streptococcus was isolated. Cannon,[25] Ghon and Namba [26] and others have also championed the hematogenous origin of appendicitis. Aschoff,[27] especially, Heyde [28] and apparently most recent writers, on the other hand, consider appendicitis, not as a blood stream infection, but as the result of an invasion of the appendix by organisms indigenous to the intestinal canal. The enterogenic theory need not exclude the infection of the throat as the starting point. We know that swallowed pathogenic bacteria can pass the antiseptic barrier of the stomach, and we also have every reason to know, especially in the last two years, that an enteritis is a frequent complication of throat infections, presumably due to the same organism. Both a direct invasion and an invasion by extension suggest themselves as possibilities. Comparative histologic and bacteriologic study of appendixes removed from patients with and without primary throat infections may throw light on this subject, as Helmholz, rather analogously, has been able to establish a different pathologic manifestation for ascending and hematogenous pyelitis.

From what I have said, it is obvious that the evidence concerning a pathogenic relationship between appendicitis and upper respiratory tract infections varies so greatly that unexceptionable conclusions as to the relative frequency and relative importance of such a relationship cannot as yet be made. That such a relationship exists frequently enough seems more than probable. It is not my purpose to draw numerical conclusions or to offer any solution, but rather to call attention to this subject again in the hope that it will serve as a stimulus to further observation and study.

In conclusion, I should like to state very emphatically that while nonappendical abdominal pains are much more frequent as an accompaniment of throat infections in children than are those due to an inflamed appendix, this fact should not at any time stand in the way of a diagnosis of appendicitis if convincing symptoms of appendicitis are present. Possibly, indeed, a simultaneous, or preceding, throat infection should make us rather incline toward that diagnosis than away from it.

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20. Kerley, C. G.: The Practice of Pediatrics, ed. 2, Philadelphia, W. B. Saunders Company, p. 252.
21. Kassowitz, M.: Praktische Kinderheilkunde, 1910, p. 199.
22. Kretz, R.: Angina und Septische Infektion, Ztschr. f. Heilk. **27:** 296, 1907.
23. Adrian, C.: Die Appendicitis als Folge einer Allgemeinerkrankung, Mitt. a. d. Grenzgeb. d. Med. u. Chir. **7:** 407, 1901.
24. Poynton, F. J., and Payne, A.: A Further Contribution to the Study of the Etiology of Appendicitis as a Result of a Blood Infection, with Particular Reference to the Tonsils as the Primary Seat of Infection, Lancet, Aug. 17, 1912.
25. Cannon: Ueber die Frage der hematogenen Infektion bei Appendicitis und Cholecystitis, Deutsche Ztschr. f. Chir. **95:** 21, 1908.
26. Ghon, A., and Namba, K.: Zur Frage über die Genese der Appendicitis, Beitr. z. path. Anat. u. z. allg. Pathol. **52:** 130, 1912.
27. Aschoff, L.: Pathogenese und Etiologie der Appendicitis, Ergebn. d. inn. Med. u. Kinderh. **9:** 1, 1912.
28. Heyde, M.: Bakteriologische und experimentelle Untersuchungen zur Etiologie der Wurmfortsatzentzündung, Beitr. z. klin. Chir. **76:** 1, 1911.

Clinical Notes, Suggestions and New Instruments

STRANGULATED INGUINAL HERNIA IN A SIXTEEN DAY OLD INFANT

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Strangulated hernia in itself is no curiosity, but its occurrence in a 16 day old infant is very unusual. Dr. William B. Coley, whose experience with hernia is perhaps greater than that of any other living man, tells me he has had but one comparable case, which was that of a 14 day old child, who was operated on and recovered. My patient had the onset of symptoms on the sixteenth day, was operated on on the twentieth day, and recovered surprisingly and promptly from what seemed to be a desperate situation.

I saw the patient Tuesday afternoon, March 8, 1927, at the Baptist Hospital in Fort Worth. There was a history of four days' illness. The boy was comfortable and happy from birth to the sixteenth day, when he began to cry and vomit. This was thought to be colic. The next day cramping and vomiting continued, and atropine was given with the idea that the trouble might be due to pyloric stenosis. The child vomited occasionally Monday, and Monday night began to vomit frequently and continued to do so until Tuesday afternoon, the vomitus gradually becoming fecal. Nothing had been retained by mouth for the past forty-eight hours and the abdomen had become greatly distended. At this point a pediatrician, Dr. James L. Spivey, was called. He recognized promptly the true condition and asked me to see the baby.

Physical examination showed great dehydration. The child vomited intestinal contents at intervals, with a hippocratic facies impending. The skin was dry and loose, the limbs were emaciated, and the eyes were sunken. The hands and feet were cold. There was slight cyanosis. The abdomen was greatly distended and tympanitic. The anus was perforate. In the right inguinal canal and extending down into the scrotum was a firm, fixed mass which was tender and did not transilluminate. The condition was diagnosed as strangulated right inguinal hernia with intestinal obstruction.

Under procaine hydrochloride anesthesia an inguinal incision was made. The tissues about the sac were turgid and infiltrated with blood. The sac was incised. There was a loop of small intestine in it tightly held by a constricting neck, quite hemorrhagic, and lightly adherent to parts of the sac wall with fresh fibrin. The constriction was nicked and the loop of intestine, which seemed surely viable, was replaced. The sac was partially trimmed away, but no attempt was made to dissect it from the cord, except at the neck, to get a suture clear of the vessels and vas. The testis was blue-black and probably necrotic but was left. The hernia was repaired without transplantation of the cord. The child was given 200 cc. of physiologic sodium chloride solution subcutaneously, kept warm, and given one or two doses of caffeine sodiobenzoate. He never vomited after the operation, though he looked very ill during the night. The next morning he was pink and warm and began to nurse eagerly, and except for a few green stools for a day or two had a rapid and smooth convalescence.

606 Penn Street.

Special Articles

THE PHYSICIAN AND HIS BANK

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NEW YORK

[EDITORIAL NOTE.—This is the second of a series of special articles by Mr. Rukeyser. When the series is completed it will be printed in pamphlet form.]

The recent revolution in American finance during which the banks became department stores of finance is of peculiar significance to physicians and other professional men. The change has transformed commercial banks from mere tools for business men into instrumentalities of use to all.

In prewar times, a bank was engaged almost exclusively in accepting deposits and extending credit. Banking was simple, and of restricted usefulness. Today the ultramodern banks and trust companies perform a complete circle of financial service, and have broadened their field to include the entire community. For example, the largest bank of the country, which might be expected to specialize in serving large corporations, solicits accounts in its compound interest department from individuals who can spare a dollar or more.

If the physician selects the modern type of bank, he need make no other financial affiliations. The well equipped bank will handle any conceivable type of money transaction. It is a time saver for the busy physician to have to make only one financial contact, instead of many. Modern banking facilities, if availed of, will free scientific men from the burdens and the problems incidental to handling money. A good bank will not only effect economy in time, but also protect an amateur from his own weaknesses and frailty of judgment.

As a class, physicians do not seem to like banks or bankers. Medical men are inclined to feel that they get less consideration at the bank than business men of equivalent income. Specifically, medical men in larger cities chafe under inability to borrow at the bank on their unsecured notes, as business men commonly do. They feel that there is a lag between the time when professional services have been rendered and the time when bills are paid, and that bank credit may legitimately be drawn on to tide the physician over such interims. Physicians feel that, like business men, they have accounts receivable, which in effect would tend to make bank loans to physicians self liquidating.

And yet in practice, the ordinary physician, especially in the larger cities, where banking follows general principles rather than rule of thumb personal relationships such as prevail in smaller places, finds it difficult, if not impossible, to get unsecured loans. When lacking collateral, the needy physician is driven to the loan societies, which charge a higher interest rate and require indorsements. Thus, the physician is likely to feel that his profession is being discriminated against by the banks.

The conventional banker is equipped with reasons why the physician is not entitled to bank credit, but I am by no means convinced that the profession will always be satisfied with those reasons. Until comparatively recently, commercial banks were servants of the business community exclusively, and envisaged their operations solely in terms of business. With the spread of banking to the personal, household and professional field, new horizons for bankers seem to be needed. Formulas may be discovered to make safe unsecured loans to physicians. The intangible factors make for safety. As a class, physicians are men of character, from whom ordinary honesty may be taken for granted. If there are black sheep in the profession, they are known to their brother physicians, and banks could get a line on their characters by consulting with local medical societies.

The barriers point to the weaknesses of the economics of the ordinary physician. He may be careless and unsystematic in sending out bills, and unduly tolerant of delays in receiving payments. Accordingly, the banker is uncertain as to when the physician's "accounts receivable"—funds owed by patients who have already been billed—will be turned into cash, with which bank loans can be discharged. Banks specialize in making short term loans to borrowers who give every evidence of ability to pay off the obligation promptly on the due date. If the penurious physician is imposed on by his debtor patients and is unable to forecast when payments will come in, the commercial banker feels that bank credit cannot be safely lent. Banks are of course the greatest debtors in the community, and most of their obligations must be met on demand from their depositors. Accordingly, they must undertake to keep their investments and loans liquid, or readily convertible into cash.

To the extent that physicians become better friends of themselves and improve their accounting methods, they will heighten their prestige at the banks. The more progressive physicians, especially specialists, have already installed scientific accounting methods, and are showing the way to their more backward colleagues. The banks are perplexed, however. They are likely to find that the successful physicians who have a large income which flows in with planned regularity possess securities that make excellent collateral for bank loans. On the other hand, those without collateral are likely to be either young practitioners or unsuccessful ones, or those who are slovenly in methods of sending out and collecting bills.

Where a physician owns high grade stocks and bonds, he can of course arrange secured bank loans on advantageous terms. He does not face a problem in getting bank credit to tide him over emergencies, or periods of peak or unusual expenditures. Banks are coming to require collateral even from retired business men who do not have current receivables. And yet collateral loans are more akin to pawn broking than to commercial banking, which accepts the late J. Pierpont Morgan's dictum that the best collateral for loans is character.

The physician should take a leaf from the book of experience of the business man, and lay the basis for bank credit before he needs it by taking his banker into his confidence and seeking his advice in handling the financial details of his professional activities. The resourceful banker may be able to suggest accounting forms and other systematic devices for inducing patients to pay their bills more promptly. If a banker has had an opportunity over a period of time to judge the normal experience of a physician in the matter of collec-

tions, he will feel more confident in making an unsecured loan.

Until there has been a reformation of financial practices of physicians and a change in the policy of bankers, it will of course be the part of prudence for the individual physician to select his investments with an eye on their acceptability as collateral for bank loans.

Moreover, the physician should keep as working capital substantial funds on deposit in a checking account and in a thrift account. He needs a far larger cash balance than a salaried employee, of equal income, whose pay checks come in uninterruptedly every week. The provident physician will not consider borrowing, except when unlooked for emergencies arise, but will accumulate enough working capital to pay for current office and home expenses during interludes between the bill distributing and the bill collecting periods. In times of emergency, it becomes a question whether the affluent physician should sell securities to get cash or borrow against them at the bank. If the need is temporary—or if the means for making the expenditure will soon be provided out of income—borrowing is desirable. If, on the other hand, the expenditure is of a permanent nature, which cannot be provided out of income except over a long period of months or years, it is more advisable to sell securities or other property to get cash. This decision will be somewhat dependent, however, on whether the rate of interest charged at the bank is more or less than the return on the property used as collateral. Where the income on the collateral more than carries the expense of the bank loan, borrowing for more extended periods may be undertaken, provided the bank has expressed willingness to let the secured loan run on for more than the customary three months' period.

The modern bank, as a department store in finance, does more than accept deposits and make loans. Its subsidiary functions are likely to be of especial use to the physician. The progressive bank will buy and sell securities for customers without adding anything to the broker's commission. There is an advantage to the investor in dealing through his bank, instead of directly with a broker. In the first place, he shifts to the bank, which has better sources of information, the responsibility for selecting a reputable broker. Secondly, the physician thus eliminates the hazards of a brokerage contact, which might through passing on gossip seduce him into unwise marginal speculations and in and out trading, which yield large commissions to the broker but little except worry and expense to the customer. The bank, buying and selling securities only as a matter of service, has no financial motive for stimulating unwarranted activity.

Some banks, in addition to rendering this brokerage service, through bond departments act as security dealers, and make a profit on the sale of new issues. Where such a relationship exists, the physician should recognize that the bank's advice may be less disinterested than it would be if the bank were buying outside securities in which it had no stake. In such cases, the physician, who wishes an impartial check-up, can avail himself of the services of an outside investment counselor or of the financial editor of a well edited urban newspaper or magazine.

A person who has chosen medicine as a life work is unlikely to be primarily interested in the accumulation of money or in financial problems. The modern national bank or trust company has set up machinery to free such a person from all the tedium of handling his estate. These services run through the life of a practicing physician and can be extended beyond death through the naming of a banking institution as trustee of an estate.

Although the bank is a profit making institution, its fees are usually less than it costs a person in time to perform the services himself.

Moreover, persons in an entirely different field of activity, such as medical men, are unlikely to be skilled in the technic of administering property. Through a custodian account, the bank or trust company at a modest fee will act as financial secretary, and will accept securities for safekeeping; collect and remit income; remind the customer of maturity dates on bonds and collect and disburse the principal and interest as directed; advise customers of "rights" to subscribe to new issues; execute orders to buy or sell securities; prepare and submit regular statements concerning the status of a customer's estate; watch for receiverships or reorganizations that affect a customer's holdings; prepare federal and state income tax returns; and attend to the collection of rents, inspections, insurance repairs, tax payment, renting or the selling of property. Such services are especially useful during trips abroad when these matters might otherwise be neglected or placed in the hands of amateurs or of those who are busy with their own affairs.

An alternative to use of the security custodian service is the renting of a safe deposit box at the bank, where securities and other valuable documents may be kept under lock and key. The safe deposit box is better than keeping such papers in old bureau drawers, but does not obviate the need of continuous personal handling.

A step further than the custodian service is the turning over of funds to a bank or trust company in the form of a voluntary living trust, of which the customer himself is the beneficiary. The advantage of this method is that it creates a nest-egg which is free from the ordinary vicissitudes of life. By creating a trust, the physician who might be tempted to speculate imprudently or to use part of the principal for unnecessary expenditures can protect himself against his own weaknesses. The creator of the trust can relinquish as much or as little discretion over the fund as he wishes. There is, moreover, an increasing use of living trusts to provide for beneficiaries, instead of making the division of the estate an entirely postmortem procedure. Living trusts obviate the need of expense, formalities, delays and publicity before probate courts.

The progressive bank or trust company will also act as recipient of life insurance bequests, and manage them safely for beneficiaries. On the other hand, the companies themselves will keep the funds, and pay them out only in the form of income. It is usually satisfactory to leave the funds with the insurance company. The chief advantage in directing that they be turned over to the trust department of a banking institution is that it becomes possible to designate in what types of securities the funds should be invested. This advantage is not of much practical importance, because the well conducted insurance company provides expert investment management of funds left on deposit.

Banks and trust companies will also advise customers concerning insurance. National banks in small com-

munities are actually permitted to write insurance policies. In Massachusetts, the savings banks can sell a special type of life insurance at a lower rate than the regular insurance companies.

Banks will also sell foreign exchange in order to make it possible to transmit funds to alien countries.

When the physician intends to travel, he can arrange for a letter of credit or for travelers' checks through his bank. Most banks will also arrange steamship accommodations, and be helpful in getting a passport viséed.

In addition, the bank is a reservoir of financial facts and knowledge. It has the facilities for investigating promoters and brokers. It has on file or can get from correspondent banks or mercantile credit companies a sketch of the financial status of individuals and corporations. When a surgeon contemplates operating on a stranger, he can learn through his bank whether the man is reputable and likely to meet his obligations.

The ideal medical man is not mercenary; if he were, he would have drifted into one of the money making pursuits. Yet even the most unselfish individuals and professions live in a money economy and cannot escape from financial problems and obligations. The well managed bank or trust is organized to relieve the individual of many inescapable financial problems.

Among 27,937 banks in the country, there are wide variations as to quality. For the most part, the big banks in the larger cities are better organized to render a complete service than banks in rural sections. But all the brains and capacity for sympathetic service are by no means monopolized by the big bankers. Officers of smaller institutions are frequently in better position to give individual attention. A bank that does not render any services except accepting deposits and making loans is not in step with modern tendencies and is peculiarly unadapted to the needs of the busy physician. A bank whose officers are loath to give advice cheerfully and helpfully should be avoided. The physician can find the right bank by shopping around, and by consulting alert and discriminating business men among his acquaintances.

Frank A. Vanderlip, former president of the National City Bank, was a pioneer in extending bank services. He directed his foreign branches to purchase theater tickets and reserve hotel accommodations for customers traveling abroad. Old fashioned skeptics would ask, "Is that banking?" Mr. Vanderlip would reply that it was service and that banks were service institutions, with nothing to sell except service.

Thus the scope of banks has greatly broadened. In this age of specialization, the person with property can unload many of the routine operations and decisions on a bank or trust company, and keep himself free for money making and the pursuit of his own specialized professional activities.

Intelligent business men have for generations understood banks, trusted bankers, and hence got most out of them. Other classes, including physicians, have been distrustful of banks and have failed to use them fully to their own advantage. Bankers as a class are no more perfect than ministers, dentists or plumbers, but in the United States, under state or federal supervision, well managed banks are trustworthy institutions.

Universal banking, as practiced in the United States, is a new economic phenomenon. On the continent of Europe, the chief currency is bank notes, not bank checks, as in the United States. Abroad, it is a sign of economic affluence to have a bank account. In this country, the trend is in the direction of offering a banking facility to every adult member of the population.

As a phase of this expansion, the banks will tend to widen their understanding of the noncommercial classes. As part of this development, the banks will get better acquainted with the financial problems of the medical profession, and the physician should meet the banker half way and get to know him better. For the most part, banking fees are slight. The banks depend on volume for their gains, not on wide profit margins.

SUMMARY

Select a competent banker and repose trust in him.

Ascertain from your banker what banking services would meet your special needs.

Build up enough working capital out of earnings to obviate the need of becoming a chronic borrower.

To meet emergencies, be prepared with good collateral in the form of stocks and bonds, against which you can procure bank loans.

Be systematic in the handling of the business side of your professional activities; send out monthly bills and insist on prompt payments.

In providing for your dependents, get the advice of your banker concerning insurance and living trusts.

225 Central Park West.

THE RECTAL ADMINISTRATION OF ETHER AND OIL

AND MORPHINE, MAGNESIUM SULPHATE AND ETHER IN SURGERY AND OBSTETRICS *

Report to the Council on Pharmacy and Chemistry

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(Continued from page 2117)

II. So-Called Synergistic Analgesia

Gwathmey's method of inducing anesthesia by the rectal administration of ether in oil following the administration of morphine sulphate was not adopted generally. In 1921, in a paper entitled "Synergistic Colonic Analgesia," Gwathmey [11] said:

> We propose now to introduce another element into colonic anesthesia, which will render expert supervision unnecessary. . . . It is termed synergistic analgesia. By synergism is meant the reciprocal augmentation of the action of one drug by that of another. This effect is not due to a simple summation of similar pharmacologic actions, for they are altogether too great. . . . At the Presbyterian Hospital it has been definitely determined that the addition of a small amount of magnesium sulphate to the usual hypodermic of morphine increases the value of the hypodermic from 50 to 100 per cent. We propose to take advantage of the knowledge thus gained and convert colonic anesthesia into synergistic colonic analgesia. In other words, we propose to get a complete brain block by using much smaller amounts of ether than heretofore employed and adding to this effect of the ether synergistic effects of the combined morphine and magnesium sulphate.

Gwathmey divides the stages of anesthesia into the first stage, that of excitement, which is preceded by a period of analgesia, the second stage, and the third or

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surgical stage in which operations are performed, followed by a zone of danger and finally by death with excessive doses of the anesthetic. He proposes to utilize only the analgesic and first stages in which excitement is abolished, this being separated from the danger zone by the second and third stages, rendering expert supervision unnecessary. After discussing magnesium sulphate he says:

> Its combination with morphine was first suggested by E. J. Pellini of the pharmacologic department of the University and Bellevue Hospital Medical College, and in association with the writer the effect of this combination was determined as follows: A sufficient number of animal experiments was conducted to prove one-eighth grain of morphine in 2 cc. of 25 per cent solution of chemically pure and sterilized magnesium sulphate, given hypodermically and repeated twice at half-hour intervals, analgized an animal sufficiently for the full force of an artery clamp to be placed anywhere on the skin without being noticed by the subject. . . . One-eighth grain of morphine by hypodermic injection in 2 cc. of magnesium sulphate solution, given two hours before operation and twice repeated at half hour intervals, is sufficient to reduce the amount of ether heretofore used in oil-ether colonic anesthesia by about one half. With this hypodermic dosage, perfect analgesia with unconsciousness has been obtained by the addition colonically of 3 ounces of ether and 2 drachms of paraldehyde in oil. This amount is amply sufficient for a two hour operation.

The technic for the clinical use of the method is not described in the paper, but stress is placed on the general advantage of the synergistic action of morphine and magnesium sulphate in causing analgesia (not anesthesia). He says:

> When magnesium sulphate (from 1 to 2 cc.) is used with morphine (from 1/12 to 3/4 grain) instead of plain water, and given by hypodermic injection, the value of the morphine is increased from 50 to 100 per cent. That is, one hypodermic injection will do the work of from two to four.

The larger dose of morphine, 1/8 grain (0.024 Gm.) of the sulphate (assuming that to have been meant by Gwathmey), is more than is commonly directed before the administration of ether, and no evidence is submitted in the paper to support the statement just quoted.

In the discussion of Baskerville's [10] paper, Gwathmey said of colonic anesthesia, "There are two factors it seems to me that have retarded its use more than anything else and one is the fact that we put in the total amount of anesthetic at one time;" but five years later he [11] said:

> It is necessary to give at one time the total amount, as determined by age, weight and general condition of the patient, in order to establish the ether tension in the blood which is necessary to produce anesthesia. . . . It is now definitely established that the patient absorbs 2 ounces of ether an hour—a smaller amount than by any other method in common use.

The advantages claimed include quiet sleep and respiration, normal pulse, warm skin with absence of cold sweat, absence of changes in the blood and urine, and infrequency of nausea and vomiting; and to these may be added the later claims [26] of reduction or absence of postoperative pain, distention, pneumonia and shock.

In 1921, Gwathmey [27] gave the technic for the synergistic use of morphine and magnesium sulphate preliminary to nitrous oxide and oxygen briefly as follows: Ninety minutes before operation, from 200 to 400 cc. of 4 per cent magnesium sulphate at 110 F. is administered by gravity in not less than thirty minutes by hypodermocylsis; seventy-five minutes before operation, one-eighth grain (8 mg.) of morphine in water or magnesium sulphate hypodermically repeated at intervals of from fifteen to twenty minutes until three-eighths grain (24 mg.) is given to the average adult. If an idiosyncrasy is present it will develop before the time for the third dose. One-fourth grain (16 mg.) is often sufficient. The room should be dark; the patient should not be disturbed.

Reference was made in the first paper of the series relating to "Synergistic Analgesia and Anesthesia" to clinical studies at the Presbyterian Hospital, and in 1922 Gwathmey and Greenough [26] reported that they had used synergistic anesthesia in thirty-nine operations in that hospital. They state that magnesium sulphate, morphine and chlorbutanol were used in all, nitrous oxide in twenty-one, combinations of ether and nitrous oxide in the others, and procaine hydrochloride in nine. They usually employed from 300 to 400 cc. of solution of magnesium sulphate and three-eighths grain (24 mg.) of morphine sulphate in three doses. The dose of chlorbutanol appears to have been from 5 to 20 grains (0.3 to 1.3 Gm.).

Gwathmey and Hooper,[28] in 1924, reported the results of animal experiments designed to show whether magnesium sulphate and ether act synergistically. They state that Meltzer and Auer [29] had found that anesthesia was induced in animals with one-tenth the average anesthetic dose of magnesium sulphate. Gwathmey and Hooper found that the anesthetic dose of ether injected intravenously was 39 per cent of the fatal dose, and that the anesthetic dose of a mixture of ether and magnesium sulphate solution was 49 per cent of the fatal dose. Nevertheless they say:

> There has been a reciprocal potentiation of the anesthetic action by combining magnesium sulphate and ether amounting in this case to approximately 73.5 per cent. . . . The toxicity of ether and magnesium sulphate in combination is not potentiated. It is a simple summation of the toxicities of the two compounds.

If such striking synergistic action is exerted by the magnesium sulphate, it would be a simple matter to settle the question definitely by determining the amount of ether required in a number of operations with the same procedure except that half the patients would receive morphine sulphate in water and half would receive it in solution of magnesium sulphate, preferably without the anesthetist's knowing in which the magnesium sulphate had been injected.

If one considers the dose of magnesium sulphate alone, there is a possible basis for the statement, but they found the anesthetic dose of magnesium sulphate to be 97 per cent of the fatal dose (which is hardly correct); hence, it is unsuited for use alone in anesthesia. Based on the anesthetic action of ether, their results indicate the reverse of the statement quoted. As a matter of fact, the experiments do not indicate the value of magnesium sulphate, since the results will vary widely with the rate of injection and other factors.

It will be observed that, in the early papers dealing with synergistic anesthesia, Gwathmey laid special

26. Gwathmey, J. T., and Greenough, J.: Am. J. Surg. (anesthesia supp.) **36**: 22 (Jan.) 1922.
27. Gwathmey, J. T.: Current Progress in Science and Practice of Anesthesia, J. A. M. A. **77**: 421 (Aug. 6) 1921.
28. Gwathmey, J. T., and Hooper, C. W.: J. Lab. & Clin. Med. **10**: 641, 1924.
29. Meltzer, S. J., and Auer, J.: Zentralbl. f. Physiol. **27**: 632, 1913.

emphasis on the synergistic action between magnesium sulphate and morphine, apparently unaware that Issekutz [30] had found in 1915 that no such synergism exists, but that in later papers the stress is placed on the synergism between magnesium sulphate and ether.

Gwathmey and Schwartz [31] used the term synergistic anesthesia when unconsciousness is produced and synergistic analgesia when consciousness is retained. They state that the patient rarely needs morphine after operation, that there is little paresis of the intestine and little acidosis. Nausea and vomiting are practically absent except when the gallbladder is involved, less ether is used, less bronchial and renal irritation result, and it avoids emotional factors including fear, dread and anxiety. They say, "The most conspicuous result when using synergistic analgesia, with and without inhalation anesthesia, is the total absence of shock or exhaustion."

Gwathmey [32] cites the evidence of cases selected at random from more than 200 similar cases to illustrate the synergism of morphine and magnesium sulphate in man, and he reiterates his previously defined difference between the synergism of magnesium sulphate and morphine and the synergism between magnesium sulphate and ether as follows:

> It seems to act mechanically with morphine, holding it in contact with the tissues longer than the morphine can maintain such contact alone; but with ether, the magnesium sulphate acts by deepening or increasing the effect rather than by prolonging it.

The experimental evidence for these two forms of synergism will be discussed before the clinical evidence is considered.

ANESTHETIC ACTION OF MAGNESIUM SALTS

Meltzer and Auer,[33] in 1905-1908, reported the results of their studies on the anesthetic action of salts of magnesium. They found that a moderate dose produces deep, often lasting, anesthesia without previous excitement. There is complete relaxation of all voluntary muscles and inhibition of some of the less important reflexes, but the reflex inhibition of respiration by ether inhalation is not abolished. Operations can be performed on cats without signs of pain while they are still able to move about. The blood pressure is depressed but little during anesthesia in rabbits and cats, but considerably in dogs. Many cats and dogs vomit before the onset of anesthesia. The dose required to produce anesthesia is near the fatal dose, and when larger doses are used it induces profound anesthesia and general paralysis of the respiratory center while the circulation shows little disturbance. Prolonged artificial respiration restores the respiration if a massive dose has not been given. In one instance, artificial respiration was maintained an hour in a rabbit in which the pupils remained normal, the heart continued to beat strongly and the mucous membranes retained their normal color, though the animal was completely paralyzed, showing that anesthesia was not due to asphyxia. It is plain that the respiratory center is the seat of danger in anesthesia with the salts of magnesium causing paralysis of nerve structures, though a curare action is also involved.

Meltzer and Auer,[29] in 1913, stated that scarcely one-tenth as much ether was required to produce anesthesia in the dog and rabbit with magnesium sulphate as without it, but no mention was made of such remarkable potentiation when the results of their experiments were presented before the Society for Experimental Biology and Medicine in that year. On the contrary, they [34] said, "If the magnesium would have only a peripheral effect there could have been no summation with the subminimum central effect of the ether." Meltzer and Auer were aware of the value of potentiation of anesthetic action without potentiation of toxicity, but they were not impressed by the results mentioned in these preliminary papers, and about two years later Peck and Meltzer [35] used magnesium sulphate alone intravenously as an anesthetic in operations on three patients. The anesthetic dose for man is about 0.45 Gm. per kilogram, but spontaneous respiration was interrupted during nine minutes in one patient. Analgesia without loss of consciousness was induced by the injection of about 0.14 Gm. per kilogram in one patient who remained conscious during the operation.

Issekutz [30] studied the synergistic action of magnesium sulphate with various hypnotics, with morphine and with scopolamine. He concluded that combinations of magnesium sulphate and the hypnotics, such as chloral hydrate, have an effect that is somewhat less than the arithmetical sum of their actions, that there is a slightly broader zone of safety with such combinations but that no potentiation occurs. He says that there is possibly a slight potentiation of morphine and magnesium sulphate, and a much greater potentiation with scopolamine and magnesium sulphate on the respiratory center, but with both the zone of safety is less.

Beckman,[36] in 1924-1925, published two papers on the alleged synergism of magnesium sulphate and morphine. He reviewed the clinical literature and said:

> A complete review of these papers is not necessary here, since practically all the writers interpret their findings on the basis of (1) a misunderstanding, and (2) a false conception. This misunderstanding lies in the fact that sincere but entirely inadequate animal and human experimental work has been accepted as proving that such a synergism exists, whereas careful and thoroughly scientific studies have shown that this simply is not true at all.

Beckman performed five series of experiments: (*a*) To determine the amount of ether-oil that is always effective in inducing satisfactory anesthesia. (*b*) To determine the amount of morphine sulphate that is necessary to obtain satisfactory anesthesia when a mixture of ether and oil is introduced. (*c*) To determine the interval that should elapse after the injection of the morphine before the introduction of the mixture of ether and oil for satisfactory anesthesia. (*d*) To determine the influence of adding magnesium sulphate to the morphine in reducing the amount of ether required. (*e*) To determine the influence of magnesium sulphate in reducing the amount of morphine required before the administration of the ether and oil.

He says that the alleged synergism between magnesium sulphate and morphine does not exist because

30. Issekutz, B.: Therap. Monatsh. **29**: 379, 1915.
31. Gwathmey, J. T., and Schwartz, G.: M. J. & Record **119**: 69, 1924.
32. Gwathmey, J. T.: Synergism of Magnesium Sulphate and Morphine, and Magnesium Sulphate and Ether, J. A. M. A. **85**: 1482 (Nov. 7) 1925.
33. Meltzer, S. J., and Auer, J.: Am. J. Physiol. **14**: 366, 1905; **15**: 287, 1906; **16**: 233, 1906; **23**: 141, 1908.
34. Meltzer, S. J., and Auer, J.: Proc. Soc. Exper. Biol. & Med. **10**: 159, 1913.
35. Peck, C. H., and Meltzer, S. J.: Magnesium Sulphate Anesthesia, J. A. M. A. **67**: 1131 (Oct. 14) 1916.
36. Beckman, Harry: J. Lab. & Clin. Med. **10**: 189 (Dec.) 1924; The Alleged Synergism of Magnesium Sulphate and Morphine, J. A. M. A. **85**: 332 (Aug. 1) 1925.

when all the conditions for inducing anesthesia were optimum except for a reduction in the amount of ether, or for a reduction in the amount of morphine, the addition of magnesium sulphate failed to increase the sedative action of the morphine. In other words, the effects were precisely the same as though the magnesium sulphate had not been given. He found, further, that when magnesium sulphate and ether were given together symptoms of distress (howling) occurred. This did not occur after an effective dose of morphine had been given, and it was not abolished by smaller doses of morphine with magnesium sulphate than of morphine alone. He concludes that there is no satisfactory evidence of the synergistic action of morphine and magnesium sulphate in man with the doses commonly recommended.

Animal experiments form the basis of every well considered method of using drugs therapeutically, as stated previously; and while the results of all the experimental studies with which I am acquainted fail to substantiate the claim that magnesium sulphate potentiates the action of morphine or that of ether in the manner claimed, if satisfactory clinical evidence can be obtained in support of them they must be accepted; but far better evidence must be submitted in far better and more systematic clinical studies than any with which I am acquainted.

Adams,[37] in 1924, reported the use of morphine sulphate and magnesium sulphate as an obstetric analgesic in sixty cases of labor, fifty-four of the patients being primiparas. He began his observations before the appearance of Gwathmey's first paper on painless childbirth in 1923. He says that Gwathmey and his associates had found that one-eighth grain (8 mg.) of morphine sulphate with 2 cc. of a 25 per cent solution affords greater postoperative relief in gynecologic operations than one-fourth grain (16 mg.) of morphine given alone; but he found that while one-eighth grain of morphine and 1.5 cc. of 25 per cent solution of magnesium sulphate lessened the pains of labor, the more favorable results were obtained only with one-sixth grain (11 mg.) of morphine and 2 cc. of the solution of magnesium sulphate. In thirteen cases this dose was favorable but not lasting, and it was repeated. Adams found that the total length of labor was somewhat shorter than the average of normal labor given by Williams and by De Lee. There was no excessive postoperative hemorrhage and no abnormal relaxation. Seven children were slightly cyanotic less than five minutes, and none required artificial respiration. One child was born in pallid asphyxia; it gasped a few times but could not be resuscitated. It had an enlarged thymus, and its Wassermann reaction was four-plus. The death was not attributed to maternal medication. In a parallel group of cases in which no morphine or magnesium sulphate was given, 4 per cent were either born dead or in a pallid asphyxia. He says that it is difficult to tabulate the effect of medication on pain, and under apparently similar conditions one suffered extremely, another but little. It is well known that one in pain appears to bear it better in a quiet, dark room than one who is continually annoyed by repeated examination, and the work reported by Adams was done with the disadvantage that all patients were used for teaching, and each patient was subjected repeatedly to rectal abdominal examination by a senior student. Four per cent did not show any result of the medication. Fifteen had extremely easy labor with practically no pain until late in the second stage, when pain was controlled by ether, and ether was used in the last of the second stage in practically all cases. The results in ten cases were poor though the patients had received some relief between contractions. The relief lasted only from two to two and a half hours.

Glass and Wallace,[38] in 1922, compared the results obtained in a series of operations in which the synergistic method of Gwathmey was employed with another series in which the magnesium sulphate was omitted. They give the following in their comparison of results: 1. The synergistic effect of magnesium sulphate with morphine tends to prolong the sedative action, so that rarely is morphine given postoperatively. 2. There is little paresis of the intestine, less acidosis and nausea, and vomiting is practically eliminated except in operations on the gallbladder. 3. Less ether is used, reducing bronchial and renal irritation and acidosis.

It is misleading, however, to attribute the smaller amount of ether used entirely to the magnesium sulphate, because they also used an average of 40 per cent more morphine before the operations in which magnesium sulphate was used than in those without the magnesium sulphate, and a comparison of the individual operations shows that the smaller the dose of morphine the greater the average volume of ether that they employed. Furthermore, the volume of ether used by them was often greater than that reported by other surgeons who did not employ magnesium sulphate. All but two of those who did not receive magnesium sulphate vomited. Only one of eleven who received it vomited.

Weston and Howard[39] were unable to observe any synergistic action between morphine and magnesium sulphate, but they did observe that magnesium sulphate in hypodermic doses of 2 cc. of 50 per cent solution acted effectively as a sedative in a large percentage of their insane patients. It is difficult to believe, however, that suggestion did not play an important rôle in the effects observed. It is possible that morphine and magnesium sulphate are synergistic with reference to their analgesic action without being so with reference to their sedative action in the insane.

Tyler[40] states that synergistic analgesia and anesthesia cannot be used universally, but that every year a larger percentage of patients is operated on without general anesthesia. He says that postoperative care is necessary.

Curtis[41] reports a fatality, which occurred sixty hours after operation and which he attributed to the anesthesia following the injection of 310 cc. of a 4 per cent solution of magnesium sulphate by hypodermoclysis and two injections of one-eighth grain (8 mg.) of morphine sulphate each followed by nitrous oxide and oxygen for anesthesia. The operation was completed in one hour. The patient rested comfortably six hours, when persistent nausea and vomiting began, with gradual increase in pulse rate and slight fever, with moderate distention of the abdomen. Gas was expelled freely. Eighteen hours later the urine was scanty and

37. Adams, T. W.: Am. J. Obst. & Gynec. **8**: 266 (Sept.) 1924.

38. Glass, S. J., Jr., and Wallace, H. S.: Preoperative Treatment for Postoperative Comfort, J. A. M. A. **78**: 24 (Jan. 7) 1922.

39. Weston, P. G., and Howard, M. Q.: Am. J. M. Sc. **165**: 431 (March) 1923.

40. Tyler, G. T., Jr.: Am. J. Surg. (anesthesia supp.) **39**: 51 (April) 1925.

41. Curtis, A. H.: Magnesium Sulphate Solution as an Aid in Anesthesia, J. A. M. A. **77**: 1492 (Nov. 5) 1921.

bile-stained, with many casts. Jaundice was pronounced after forty-eight hours. The pulse rate was 158, the temperature was 102.8, the leukocytes 16,000, the breathing labored, with marked prostration followed by death. A postmortem showed acute fatty changes in the liver, cloudy swelling of the parenchymatous organs and multiple hemorrhages of the pleura, pericardium and endocardium. The liver cells contained many fat vacuoles. The cytoplasm and nuclei failed to stain as deeply as normal tissue, and all the changes present were such as have been observed in liver tissue when death has resulted from an anesthetic. Changes were also observed in the renal epithelium. The liver contained 5.33 Gm. of magnesium, calculated as the sulphate.

The toxic action of magnesium sulphate on the liver described by Curtis following the injection of a total of some 12 Gm. of the salt can hardly occur with the smaller doses, from 2 to 6 cc. of 50 per cent solution, or not more than one-fourth the dose used by Curtis, which Gwathmey recommended later. However, this is one of the many illustrations that might be cited of the need of caution in the use of so-called safe methods of anesthesia.

Disregarding avoidable asphyxial deaths, there can be little doubt that the colonic administration of ether in oil has certain advantages; but whether they outweigh its disadvantages cannot be determined until many careful studies of operations have been performed with more nearly uniform methods. The evidence is not convincing that the use of from 2 to 6 cc. of 50 per cent magnesium sulphate materially lessens the amount of ether required by rectal administration to induce anesthesia. On the other hand, there is no doubt that the amount of morphine used has a decided influence on the total quantity of ether required; but there is ample evidence that the action of morphine on the respiratory center is synergistic with that of ether and magnesium sulphate, and that numerous deaths have resulted from their combined use. Whether a larger number of deaths would have resulted without the morphine, it is impossible to say. This brings up again the broader question of the urgent need of accurate statistics concerning deaths due to anesthesia in various types of operation and under varying conditions. There is no difficulty in determining the approximate number of deaths which result immediately from various anesthetics, but we have practically no accurate information concerning the ultimate fatalities such as those resulting from pneumonia and of the conditions under which these deaths occur; for example, whether they are more frequent with the much deeper anesthesia required for operations on the gallbladder than with that necessary for simple appendectomies. While, as stated, no accurate comparison can be made between the amount of ether used by various operators in combination with magnesium sulphate and those who used ether without the magnesium sulphate, an examination of the available literature does not show any striking difference.

W. D. Gatch [42] said in his presidential address at the fourth annual meeting of the American Association of Anesthetists, in 1926, "From a study of deaths or other calamities of anesthesia, I am convinced that some system as I have mentioned is far more important than the adoption of any particular form of anesthesia." Gwathmey [11] says that few anesthetists or surgeons understand the difference between the signs of analgesia and anesthesia. It is not always possible to determine just what degree of anesthesia or analgesia occurs with each of the various methods described by him and his co-workers, and no accurate analysis of the literature relating to synergistic analgesia and anesthesia is possible owing to the lack of uniformity of technic employed by those who write under the various terms analgesia and anesthesia.

This section of this study does not require a separate detailed discussion. What has been said concerning the advantages and disadvantages of rectal or colonic anesthesia applies to this section in essentials, but a final opinion requires much more accurate knowledge concerning the potentiation in anesthetic and analgesic action and the lack of potentiation in the toxic actions such as Gwathmey claims to have found. The evidence for his claims is not convincing. It seems quite possible, however, that magnesium sulphate has some action that may be utilized to advantage in anesthesia when our knowledge of its mode of action with morphine and ether is much greater than it is at present.

I have quoted Gwathmey as saying, in 1921, "We propose now to introduce another element into colonic anesthesia, which will render expert supervision unnecessary." It is proper to close with a quotation from the same author.

In 1914 he [14] wrote: "When a physician deprives a patient of consciousness he assumes the entire responsibility for his welfare, a responsibility which should not be lightly undertaken and which demands the exercise of the utmost skill and vigilance." The last statement is as true today as it was in 1914.

(To be continued)

42. Gatch, W. D.: Am. J. Surg. (anesthesia supp.) **30**: 98, 1916.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

INSULIN-SQUIBB (See New and Nonofficial Remedies, 1927, p. 197).

The following dosage form has been accepted:

Insulin-Squibb, 100 units, 10 cc.: Each cubic centimeter contains 100 units.

STAPHYLOCOCCUS VACCINE (See New and Nonofficial Remedies, 1927, p. 363).

Abbott Laboratories, North Chicago, Ill.

Staphylococcus Mixed Bacterin.—Each cubic centimeter contains 4,000 million killed *Staphylococcus albus* and *Staphylococcus aureus* in equal proportions; marketed in single 5 cc. vial packages, in single 20 cc. vial packages, and in packages of six 1 cc. ampules.

ERYTHROL TETRANITRATE (See New and Nonofficial Remedies, 1927, p. 267).

The following dosage form has been accepted:

Erythrol Tetranitrate Tablets-Merck, ¼ grain.

The Business of Physical Education.—The business of physical education is to help develop a socially efficient person; a useful citizen; a good potential ancestor; and to inculcate habits of wholesome, enjoyable psychomotor recreation in order that the biologic basis and quality may be well preserved throughout the life of the individual.—Wood, in Ninth Annual Handbook of the Physical Education Society of New York and Vicinity, p. 13.

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SATURDAY, DECEMBER 24, 1927

FREE BEDS FOR MEDICAL TEACHING

The foreword to Cushing's life of Sir William Osler points out that the latter opened the wards to the student—an important departure from methods of medical teaching previously in vogue. Before his time, didactic teaching prevailed and actual contact with patients was largely denied to the embryonic physician. Since the coming of Osler's great innovation, much progress has been made. Hospitals associated with teaching institutions have made arrangements for small clinics, for ward walks and for clinical clerkships, through which the medical student is brought into fairly intimate contact with the sick. Patients have learned to appreciate the desirability of demonstration in the clinic, and are likely to lend themselves readily to such exhibition for teaching purposes. However, the increasing cost of hospital service is causing the purely charitable bed to disappear in most instances except from institutions maintained by the city, county, state or national government.

Even the hospitals associated with great university medical schools are likely to charge considerable sums for available space; in most of the hospitals maintained by religious organizations, definite minimum charges are made for space in large wards; the so-called free bed is practically nonexistent. The patient who pays something for his care may not resent examination by resident physicians or by interns, or occasional exhibition before clinics; no matter how much or how little he pays, however, he may feel disinclined to contribute in this manner to medical education, let alone to submit himself to repeated examinations by students.

Two things are required to make bedside teaching satisfactory and efficient: first, an endowment for free beds that will be free in every sense of the word, their occupancy indicating a contract with the institution for reasonable submission to medical study, and, second, the admission of patients to such free beds by the chief or a member of the staff, who is to be responsible for these patients. In most institutions the free beds are free when no patient able to pay is found to occupy them. They may be free to some person to whom the hospital is obligated, although the patient may be without teaching interest. Actual "free beds" should be set aside and pay patients should not be permitted to occupy such beds. Obviously, this demands endowment; but hospital costs have risen so greatly that practically every bed in most institutions demands endowment anyway.

The admission to free beds in teaching hospitals by the service vitally concerned in the handling of the patients and in the whole question of teaching, rather than by lay persons in the admitting office, is a second consideration of the greatest importance. The office staff can have little if any knowledge of the desirability of the patient from the point of view of teaching. The office staff, primarily concerned in many instances in making a good financial showing, is likely to keep a bed in the pay class once it gets out of the "free bed" classification.

The bringing of the medical student to the ward was an epochal advancement in medical teaching. Failure to provide the best possible material for the purpose frequently hampers the utilization of this method. To speak of free beds as the term is applied today in most institutions is merely deceiving oneself as to the availability of the patients occupying such beds as clinical material. In some instances, in which beds originally endowed as "free beds" have been transferred to the pay or part-pay class, there may be an actual misapplication of the funds received as endowment.

THE PIGMENT OF THE URINE

The inspection of the urine as a routine procedure in clinical diagnosis harks back to medieval times or earlier. It is one of the features of the physician's practices that has been exemplified in art. In his History of Medicine Garrison[1] has pointed out that uroscopy, or water casting, was a favorite theme of the painter and wood-engraver down to the beginning of the eighteenth century, and the accessories in these representations are nearly always the same. The urinal became the emblem of medical practice in the middle ages, and was even used in some places as a sign-board device. The urine was always contained in a characteristic flask of Erlenmeyer shape, sometimes graduated, and this flask was carried in an osier basket with lid and handle, looking much like a modern champagne bucket. The physician, of whatever period, is always represented as inspecting the urine in a most judicial way, often holding it up to the light in such wise that there will be no reflection or refraction from the sun's rays. Some medieval pictures represent the physician as disdaining to touch the Erlenmeyer urinal with his hands.

The color of the urine may, indeed, become a diagnostic aid. Bile, blood and foreign pigment may often be suspected readily by mere inspection of the kidney

1. Garrison, F. H.: An Introduction to the History of Medicine, Philadelphia, W. B. Saunders Company, 1922.

secretion. The "normal" pigment of the urine which Thudichum many years ago named urochrome appears to vary in concentration in the renal output of fluid, so that a wide range of tints is observed. In large measure such variations are due to the changes in the volume of the urine, the paler shades of course being associated with the more dilute output. For this reason a "pale" urine is naturally associated in the observer's mind with low concentration of dissolved excretory constituents and, correspondingly, a low specific gravity of the fluid. The failure of these obvious relationships to be preserved in any specimen at once gives indication of the existence of an abnormality.

Although many foreign colored substances, changed or unchanged, find their way into the urine in the mechanism of elimination, the "normal" urinary pigment undoubtedly has an endogenous origin. The genesis of such a unique product inevitably excites the curiosity of the investigator; consequently there have been much speculation and not a little experimentation with respect to urochrome. In fact, the literature on the coloring matter of the urine began in 1800 with the publication of Proust's pioneer attempt to identify the pigment chemically. Despite this long history of scientific interest, the chemistry and physiology of the normal pigment of the urine have remained obscure. The latest study by Drabkin [2] in the laboratory of physiologic chemistry at Yale University has dealt primarily with the quantitative aspects of the output. They indicate that, under controlled conditions, the organism eliminates a constant quantity of normal urinary pigment from day to day and that the pigment output is essentially independent of the diet. According to Drabkin, it now appears that "urochrome is a chemical entity, which belongs to the aristocracy of biochemical substances, the endogenous products." The pigment seems to be eliminated in quantities which are probably proportional to the intensity of the endogenous metabolism, of which it may therefore prove to be a reliable index. Although the pigment output seems to be essentially independent of the dietary regimen, it is markedly augmented by fasting, by the administration of acids, and, above all, through the stimulation of the metabolism by means of several calorigenic agents. A fluctuation of the quantity of urinary pigment in the opposite direction (i. e., a decrease) was observed after the administration of alkalis and following the surgical removal of the thyroid glands (in the dog). The observations were extended to include disturbances of metabolism in man. Here Drabkin's observations [3] in cases of exophthalmic goiter and pneumonia have furnished further evidence in support of his idea that the quantity of pigment excreted is proportional to the metabolism. For example, the output was found to be above normal in all persons with exophthalmic goiter. In these cases there was a distinct parallelism of the percentage of increase in urochrome elimination and in basal metabolic rate. In several patients on whom thyroidectomy had been performed, the urinary pigment value fell to normal or, indeed, somewhat below the calculated normal level after the operation. The precursor of urochrome—whether it arises from tissue proteins or the protein component of the respiratory pigment or some entirely different tissue component—as well as its seat of origin and, above all, its precise chemical nature still remain to be disclosed.

2. Drabkin, D. L.: The Normal Pigment of the Urine: I. The Relationship of Urinary Pigment Output to Diet and Metabolism, J. Biol. Chem. **75**: 443 (Nov.) 1927.
3. Drabkin, D. L.: The Normal Pigment of the Urine: II. The Relationship of the Basal Metabolism to the Output of the Normal Urinary Pigment, J. Biol. Chem. **75**: 481 (Nov.) 1927.

THE HEALTH ANGLE IN ADVERTISING

The physician has become a prophet in the land, and health is the word with which one conjures. Regardless of the substance to be advertised, the agency goes forth in search of medical opinion with which to vaunt it. Not that the health angle is always unwarranted; sometimes it is obvious. But not infrequently the advertiser stretches a point because he knows the health angle is popular. A soup is sold with the claim, "There's health in every spoonful." Of certain toilet accessories it is said, "Your doctor will advise against harsh, rough papers." Certified milk is called "health bottled in bond." Of cream cheese the advertiser asserts, "For its body building elements child specialists specify this famous dairy food." Somebody's cough drops are labeled "The cheapest health insurance in the world." Somebody's tobacco hasn't a cough in a carload. The list of things that doctors praise include a soap: "Doctors who know more than anybody else about skins urge simple care." An ointment: "Days of pain—a dreadful scar prevented—with the dressing for burns surgeons use." A nursing bottle: "Approved by thousands of doctors." A talcum powder: "Recommended for fifty years by physicians and nurses." A disinfectant: "For years the standard with hospitals and physicians." A mouth wash: "45,512 physicians indorse it." A baking powder: "772 New York doctors declare ——— baking powder is most healthful." And innumerable breakfast foods, of which the least that is said is that "Doctors praise it."

The doctor's advice has been sought, it seems, for many of the most mundane affairs of human existence. Does one wish to wash some diapers: "The Borax treatment for washing diapers is recommended by leading physicians. Your own doctor will advise it." It seems that "Great doctors say: 'To break congestion, use mustard.'" Furthermore, "Many doctors advise that Kleenex Kerchiefs be substituted for ordinary handkerchiefs when one has a cold." And so one proceeds with the body from head to foot: "Gets-It is approved by doctors as safe and gentle."

When Feasley thumbed the lexicons and brought forth "halitosis," the sale of dictionaries to advertising agencies must have grown by leaps and bounds. A yeast concern says over the drawing of a pallid, haggard citizen, "Just making the motions—a victim of cachexia (run-down condition)." An insurance company has discovered a polite word for constipation. The Listerine agency, having put over "halitosis," tries to do the same for a fancy synonym for dandruff. The orange growers are emphasizing acidosis, probably because it rhymes with halitosis. What a great field there must be in the advertising profession for any one with a new idea.

The difficulty of evaluating advertising copy in these modern times is an evidence of the changing situation. The modern agency supports by evidence the claims for the products promoted. The documentation is secured through carefully combing the scientific texts, through consultation with scientific authorities, through the use of the questionnaire—and answering questionnaires seems to be a favorite pastime of many physicians—and through the securing of actual trial of the products by tremendous numbers of physicians. The presentation of such evidence often seems an exaggeration of conditions as they are, yet the evidence is almost invariably actual. No doubt physicians have been somewhat too ready to accept broad generalizations in the field of hygiene. They seldom require the same kind of evidence in support of a cleansing agent, a dietary product or tobacco that they would demand in support of a new remedy. Hence the promoters are easily able to secure the necessary number of medical endorsements. Fortunately the situation may take care of itself: the overdoing is certain to result in reaction. But if the great minds in the advertising agencies are wise they will begin to reconsider now. Otherwise the good is likely to be lost with the evil.

NEW FUNCTIONS OF THE SKIN

Biochemists have long appreciated the essential fitness of the skin for covering and protecting the body. The skin and its appendages are composed largely of keratin, a protein characterized by its insolubility in all ordinary reagents and by its failure to exhibit the usual chemical reactions. It thus is not only resistant physically but also highly inert chemically and seems strikingly well adapted to its function in the organism. This very correlation of chemical nature and physiologic behavior is so obvious that students are likely to neglect further study of possible function of the skin. The sweat glands and their activities early drew attention to the part these structures play in excretion, and for a long time this activity of the skin was considered as an important adjunct to the work of the kidneys. This point of view is untenable, however, in the light of newer experiments.[1] The skin does play a significant part in temperature control through its ability to conduct heat and evaporate water.

Recent studies have redirected attention to the skin and emphasized the physiologic importance, heretofore unsuspected, of certain of its constituents. The production of antirachitic properties in cholesterol by ultraviolet irradiation and the protection against rickets afforded by similar treatment of the skin are now well known. The possible rationale of such physical therapy has been provided by the chemical analysis of skin by Eckstein,[2] who has shown that approximately one fifth of the lipoid extracted from the human skin is present as free cholesterol. It seems reasonable to presume, therefore, that light treatment of the skin activates cholesterol in vivo. These implications, together with the efficacy of such treatment, indicates that the cholesterol of the skin is mobile and takes an active part in metabolism. That the skin is also of importance as an organ of storage is indicated by recent experiments on laboratory animals. Skelton[3] has studied the part played by various tissues of the cat not only in donating water to the blood after hemorrhage but also in taking up fluid after injections of various salt solutions into the blood stream. He found that, in cats which had been deprived of water for five days previous to the hemorrhage, the skin gave up about 40 per cent of the fluid—more than any other tissue examined. Again, in animals with similar treatment before the experiment, the skin took up more fluid per gram than any other tissue and accounted for approximately 14 per cent of the water held by the body when examined thirty minutes after the injection of physiologic sodium chloride solution. Evidence of a similar type of activity has been brought forward by Folin, Trimble and Newman.[4] These investigators have introduced dextrose solutions into guinea-pigs and attempted to recover the injected sugar from the various body tissues. They have shown that, thirty minutes after the dextrose solution has been given, the skin contains almost as much sugar as the blood. They point out further that, although this tissue is not a storage place for dextrose and glycogen, its significance as a temporary receptacle is greater than has thus far been realized. The possible rôle of the skin in carbohydrate metabolism is thus suggested by these analyses.

The function of the skin as a protective tissue remains undisputed. However, the capacity for storage and for mobilization of water and sugar and possibly other physiologic materials is one not thus far appreciated. For a long time bone was considered as a stable, static, structural tissue with little metabolic significance; but in this case, also, our ideas have been radically altered.

1. The Sweat Glands, editorial, J. A. M. A. **84**: 518 (Feb. 14) 1925.
2. Eckstein, H. C., and Wile, U. J.: J. Biol. Chem. **69**: 181 (July) 1926.
3. Skelton, Harold: Arch. Int. Med. **40**: 140 (Aug.) 1927.
4. Folin, Otto; Trimble, H. C., and Newman, L. H.: J. Biol. Chem. **75**: 263, 1927.

On the other hand, the experimental results described may possibly be harmonized with the chemical and physiologic resistance of the skin if one recalls the fact that it consists of various layers and that the part important as a protective tissue may not be the same that is concerned with water and sugar mobilization.

Current Comment

THE SULPHUR OF INSULIN

Interest in the occurrence of sulphur-containing compounds in the tissues was greatly enhanced by Hopkins'[1] isolation, in 1921, of glutathione and the demonstration that it is a dipeptide of glutamic acid and cystine. Cystine has long been known as an amino-acid containing a disulphide group and yielded by almost all known proteins. The disulphide group of the dipeptide can act as a "hydrogen acceptor"—a factor that has come to assume a significant rôle in the newer theories of the oxidative processes of the body. According to these views, in the oxidation of metabolites hydrogen will be given off to easily reducible substances that may be present. Thus they are "hydrogen acceptors." They bear an important relation to tissue respiration. A tissue that has been washed until it no longer "respires" will, on addition of glutathione, again take up oxygen and yield carbon dioxide. Hydrogen acceptors thus seem to be quite as essential for some processes as are oxygen donators. This knowledge lent a peculiar interest to the discovery that insulin contains sulphur. Indeed, Abel and Geiling[2] believe they have demonstrated a high degree of lability of this sulphur and its relation to the potency of the hormone. As insulin is actually a sulphur-containing compound, it becomes imperative to discover the type of sulphur linkage. Du Vigneaud,[3] who has been engaged in the study of this problem at the University of Rochester, now believes that the sulphur is present as the disulphide linkage and that insulin is most likely a derivative of cystine. The change of lability on hydrolysis is identical with what would be expected of an amino-acid derivative of cystine. Glutathione, for instance, has a sulphur lability of the order of insulin. The new investigation suggests that the cystine in insulin is linked to the rest of the molecule by a peptide linkage. In this connection the high arginine, histidine and tyrosine yields of purified preparations might be recalled. On the one hand the recent contributions to the chemistry of insulin link it up in interesting ways with the proteins; and in another way they give indications of chemical groups within its molecule that are likely to be possessed of marked physiologic reactivity. With crystalline—and thus presumably purified—insulin now available, progress in its analysis is likely to be rapid. Is it too soon to dream about the artificial synthesis of the potent pancreatic hormone?

1. Hopkins, F. G.: Biochem. J. **15**: 286, 1921.
2. Abel, J. J., and Geiling, E. M. K.: J. Pharmacol. & Exper. Therap. **25**: 423 (July) 1925.
3. Du Vigneaud, V.: The Sulphur of Insulin, J. Biol. Chem. **75**: 393 (Nov.) 1927.

PRESIDENT COOLIDGE ON FEDERAL AID TO STATES

A few years ago President Coolidge expressed himself as definitely opposed to that plan whereby the federal government allocates certain sums to the states which are willing to allocate similar sums for special purposes. In his budget message submitted to Congress, December 7, the President again announced his views on this point. He pointed out that the authorization for the promotion of the welfare and hygiene of maternity and infancy expires in 1929, and that the last extension of the act was approved with the understanding that its administration during the two added years would be with a view to the discontinuance of federal aid thereafter. That he considered the dangers inherent in the policy of federal subsidies to the states of far greater importance than any financial burden that might be incurred is shown in the following statement:

> To relieve the states of their just obligations by resort to the federal treasury in the final result is hurtful rather than helpful to the state and unfair to the payers of national taxes. To tempt the states by federal subsidies to sacrifice their vested rights is not a wholesome practice no matter how worthy the object to be attained.
>
> Federal interference in state functions can never be justified as a permanent continuing policy, even if, which is doubtful, such interference is warranted by emergent conditions as a temporary expedient. As shown in the maternity and infancy act, when once the government engages in such an enterprise it is almost impossible to terminate its connection therewith. We should not only decidedly refuse to countenance additional federal participation in state-aid projects, but should make careful study of all our activities of that character with a view to curtailing them.

It will be interesting to observe whether the too enthusiastic proponents of this legislation will endeavor again to urge its passage, regardless of the President's views and of their tacit understanding with the federal government.

URINARY ALBUMIN

Albuminuria is a symptom that may attend a variety of conditions with seemingly unrelated causes. Clinicians sometimes distinguish between "physiologic" albuminuria and that which they regard as more distinctly pathologic. In the former group the so-called orthostatic or postural albuminuria belongs. The assumption that food proteins pass unchanged into the urine under any of the familiar conditions has been abandoned, particularly since it has become feasible to demonstrate by the highly specific anaphylactic tests that the alleged possibility is untenable. There are types of nephroses in which the serum proteins are reported to be decreased in quantity along with the excretion of albumin in the urine. One naturally inquires, in view of this, whether blood-albumin passes through the kidney unchanged or if there is a difference between the urinary and the blood protein. Hewitt[1] of the London Hospital has isolated the albumins excreted by nephritic patients and compared the optical rotatory power and dispersion which he believes

1. Hewitt, L. F.: Identity of Urinary Albumin, Biochem. J. **21**: 1109, 1927.

to be a characteristic index for the identification of the proteins. The evidence gathered by Hewitt renders it extremely probable that serum albumin passes through the kidney unchanged. The albumins obtained from the urine of patients with chronic nephritis and albuminuria of pregnancy possess the same optical rotatory power and dispersion as serum albumin, and are therefore probably identical with it.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

Governor Calls Conference on Pellagra.—A conference on pellagra called by the governor, December 6, was attended by about 400 persons; in opening the meeting, the governor reviewed the work that had been done since the Mississippi flood last spring by Arkansas physicians and those from other states who came to help, and urged full cooperation between all forces of the state for the control and prevention of pellagra. Dr. Joseph Goldberger, U. S. Public Health Service, Washington, D. C., who addressed the conference, stated that the records for 1927 indicate a considerable increase in the deaths of persons from pellagra in Arkansas. The number for the last year, it is said, will total between 600 and 700.

CALIFORNIA

University News.—President Campbell of the University of California announced, December 12, among other scholarships available, a Sheffield Sanborn scholarship of $325 for a student in the school of medicine; also gifts of $450 for a study of the relation of the intestinal flora to disease; of $100 by Dr. Curle Latimer Callander in support of the Callander Surgical and Topographic Anatomy Fund; of $200 for the use of the Hooper Foundation, and of $100 by Dr. Theodore C. Lawson, Oakland, as partial repayment of a scholarship awarded him in 1919.

Society News.—The Pacific Coast Oto-Ophthalmological Society will meet at Santa Barbara, April 18-20, preceding the meeting of the Western Section of the "Triological Society," to which physicians are invited. The guests at this meeting will be Dr. Norval H. Pierce, Chicago, professor of laryngology, rhinology and otology of the University of Illinois College of Medicine; Dr. John F. Barnhill, Indianapolis, president of the American Laryngological, Rhinological and Otological Society; Dr. Luther C. Peter, Philadelphia, president of the American Academy of Ophthalmology and Otolaryngology, and Dr. Henry H. Tyson, New York.

Kenzo Koga Fined.—Kenzo Koga, whose only medical credential, according to an investigator for the state board of medical examiners, was a diploma from the American College of Mechano Therapy, Chicago, was arraigned in court at McFarland, October 4, on a charge of violating the medical practice act. He pleaded guilty and was sentenced to a fine of $100 and six months in jail. The jail sentence was suspended on condition that he pay the fine and not violate the medical practice act for two years. Koga's office over a Japanese pool hall was rather difficult to find; it contained various medicines, many bottles and boxes, surgical instruments, catheters and hypodermic needles. He also pleaded guilty to violation of the state poison act and was fined $25. Koga has practiced in California, it appears, for several years, at Marysville, Salinas, Bakersfield and Delano.

COLORADO

Dr. Bocock Resigns.—It is reported that Dr. Edgar A. Bocock has resigned as superintendent of the Colorado General Hospital, effective, January 31, and has accepted the superintendency of the Gallinger Municipal Hospital, Washington, D. C., at a salary of $5,200 a year. Dr. Bocock, who was formerly an officer in the army medical corps, came to Denver after serving several years as superintendent of the Santo Tomas Hospital in Panama City.

GEORGIA

Georgia Admitted to Registration Areas.—Following a test conducted by the U. S. Bureau of the Census, it was found that Georgia was registering more than 90 per cent of its births and deaths, and therefore it will be admitted to the birth and death registration areas in 1928. The U. S. death registration area for 1928 now includes all but five states and the birth registration area all but seven.

ILLINOIS

Personal.—Dr. Edward G. Ahrens has resigned as medical director of the Decatur and Macon County Tuberculosis Sanatorium, Decatur, to accept the superintendency of the Oakland County Sanatorium, Pontiac, Mich.——Dr. Albert N. Mueller has been elected president of the board of health of Rock Island.——Dr. Edgar C. Turner, Chicago, has been appointed health officer of the city of Savanna to succeed the late Dr. James D. Lyness.

Hospital News.—Beverly Farm, a home and school for nervous and backward children at Godfrey, has completed improvements increasing the capacity by twenty children and adding many other facilities at an expense of $40,000. The superintendent of the home is Dr. William H. C. Smith.——Additions are under construction to the Blessing Hospital and St. Mary's Hospital, Quincy, the total cost of which will be about $600,000; they are expected to be completed by September, 1928.

Society News.—The Lee County Medical Society, Dixon, was host to the North Central Illinois Medical Association, December 2; among others, Dr. Paul B. Magnuson, Chicago, spoke on disabilities of the hip joint; Dr. William A. McNichols, Dixon, indications and treatment of lung abscess by the bronchoscope, and Drs. John R. Vonachen and Clifford U. Collins, Peoria, congenital stenosis of the pyloris.——Physicians of Champaign and surrounding counties were invited to a reception and banquet at the formal opening of the Eastern Illinois Memorial Sanatorium at Urbana, December 6; among others, Dr. Charles A. Elliott, professor of medicine, Northwestern University Medical School, and Vice President of the American Medical Association, gave an address on progress in medicine.——Dr. Norval H. Pierce, professor and head of the department of laryngology, rhinology and otology, University of Illinois College of Medicine, addressed the Rock Island County Medical Society, December 13.——The Will-Grundy County Medical Society was addressed, November 30, by Dr. Victor L. Schrager, Chicago, on "Diseases of the Gallbladder and Biliary Tract," and by Dr. Robert W. Keeton, associate professor of medicine, University of Illinois College of Medicine, Chicago, December 7, on "Control of Obesity."——Dr. Robert F. Lischer, Mascoutah, gave a "Pen Picture of a Country Doctor" before the St. Clair County Medical Society, October 28.

Chicago

Personal.—A dinner will be given, January 13, by the north side branch of the Chicago Medical Society and the Physicians' Fellowship Club in honor of Dr. Lucius H. P. Zeuch, editor of the first volume of the History of Medical Practice in Illinois; Glenn Frank, LL.D., president of the University of Wisconsin, will be the speaker.——Dr. Peter Kronfeld, Vienna, Austria, has been appointed assistant professor of ophthalmology at the University of Chicago.——Otto U. King, D.D.S., for seventeen years secretary of the American Dental Association, has resigned and has been succeeded by Harry B. Pinney, D.D.S.—Dr. Frank L. Rector, editor of the *Nation's Health*, is making a survey of health and hospital problems in state and federal prisons of the country for the National Society of Penal Information, Inc., New York.

Institute of Medicine.—The fourth Ludvig Hektoen Lecture of the Billings Foundation of the Institute of Medicine of Chicago will be given by Dr. Francis Peyton Rous of the Rockefeller Institute for Medical Research, January 27, at the City Club, on "The Genesis of Gallstones." The fourth Lewis Linn McArthur Lecture of the Billings Foundation will be given February 24, by Dr. Frank C. Mann of the Mayo Clinic, Rochester, Minn., on "Experimental Peptic Ulcer." The Chicago Surgical Society will be the guest of the institute at this meeting. Dr. Franklin C. McLean, professor of medicine, University of Chicago, was elected a member of the board of governors at the annual meeting, December 6. At a meeting of the board, December 14, Dr. John Gordon Wilson was elected president of the institute; Dr. Edwin R. LeCount, vice president; Dr. George H. Coleman, secretary; Dr. John Favill, treasurer, and Dr. Ludvig Hektoen, chairman of the board.

IOWA

Society News.—Rain and bad roads caused the joint meeting at Melcher of the Monroe, Lucas and Marion county medical societies to be postponed from September 29 to October 13. Dr. Samuel T. Gray, Albia, councilor of the sixth district, discussed "The Basic Science Law"; Dr. Channing G. Smith, Granger, councilor of the seventh district, discussed "Medical Organization," and Dr. John B. Synhorst, Des Moines, "Chronic Dyspepsias." Among others, Dr. William E. Sanders addressed the Polk County Medical Society, October 25, Des Moines, on "Criteria of Malignancy and Their Application to the Management of Cancer in Women."

KANSAS

Society News.—Dr. Earle G. Brown has been elected secretary of the Shawnee County Medical Society, Topeka, for the ninth consecutive time. Dr. Brown is also president of the Kansas State Medical Society as well as secretary of the Kansas State Board of Health; at the annual meeting and banquet, December 5, Dr. Frank C. Neff, professor and head of the department of pediatrics of the University of Kansas School of Medicine, Kansas City, Mo., gave an address on the care and feeding of the new-born infant.

LOUISIANA

Personal.—Drs. Ogilvie M. Larimore and Roy F. Feemster have been appointed instructors in pathology at Tulane University School of Medicine, New Orleans; Drs. Reginald A. Cutting and Maxwell M. Wintrobe have been appointed instructors in surgery and medicine, respectively.

Society News.—At the ninth annual fall meeting in Bogalusa, November 2, the Sixth District Medical Society was addressed by Dr. Frank F. Young, Jr., Covington, on "Mental Disorders and Society"; by Dr. George S. Bel, New Orleans, on "The Heart," and by Dr. Joseph A. Danna, New Orleans, on "Recurrent Duodenal Obstruction." There was a clinic at Elizabeth Sullivan Memorial Hospital and a luncheon given by the mayor of the city. In the afternoon the members visited the industries and other points of interest. ——Dr. George R. Herrmann presented a moving picture demonstration before the Orleans Parish Medical Society, November 28, of (1) Johannes Gad's Famous Experiment Showing the Action of the Heart Valves; (2) Howard Ruggle's Fluoroscopic Study of the Movements of the Human Heart. ——The Third District Medical Society was entertained at the Country Club in Houma by the Lafourche Valley Medical Society, November 9; among others, Dr. Albert E. Fossier spoke on the electrocardiograph, and Dr. William Seaman on scarlet fever prophylaxis. Among the guests was Dr. William J. Mayo, Rochester, Minn. Following the scientific program there was a duck and game banquet.——At the recent meeting of the Louisiana Dermatological Society, Dr. Joseph N. Roussel, New Orleans, was elected president, and Dr. Thomas A. Maxwell, New Orleans, secretary.

MASSACHUSETTS

Personal.—Frederick L. Davis, deputy health commissioner of Boston, and since 1881 attached to various positions in the health department, has resigned.——Dr. C. Macfie Campbell, professor of psychiatry, Medical School of Harvard University, has been reelected president of the Massachusetts Society for Mental Hygiene.

Infant Mortality at Lowell.—According to reports submitted to the U. S. Department of Commerce from sixty-seven cities, for the week ending November 19, the infant mortality rate at Lowell was 211, which was the highest rate for the group of cities for that period. The infant mortality rate for Lowell for the year 1925 was 84.

Society News.—Dr. Adolf Meyer, Baltimore, professor of psychiatry, Johns Hopkins University School of Medicine, addressed the Massachusetts Psychiatric Society, December 9, at the Boston Psychopathic Hospital on "Genetic-Dynamic versus Nosologic Teaching in Psychiatry."——At the annual meeting of the New England Pediatric Society, Boston, December 23, Dr. Lyman G. Richards read a paper on "Some Experiences with Tracheotomy."

Physicians' Art Exhibit a Success.—The exhibition of works of art of physicians held in Boston, recently, was a distinct success from an artistic point of view, according to the *Boston Medical and Surgical Journal*. It attracted favorable criticism from professional artists and from the public generally; fifty-six physicians, including a few dentists, apparently all from New England, contributed 304 objects of art comprising sculpture, painting and drawing.

MICHIGAN

Society News.—Dr. Robert A. C. Wollenburg addressed the St. Clair County Medical Society, Port Huron, November 17, on "Eczema."——The Detroit Oto-Laryngological Society is planning a trip to the Mayo Clinic, Rochester, Minn., for its January meeting. Dr. Joseph C. Beck, Chicago, addressed the December meeting on surgical diathermy in the treatment of malignant conditions of the head and neck; Dr. Plinn F. Morse addressed the November meeting on "Agranulocytic Angina."

Personal Interviews Required for Admission.—At a meeting of the board of regents of the University of Michigan, December 2, it was decided hereafter to require personal interviews with students before accepting them for admission to the medical school. The change in policy is in part due to the large number of students seeking admission, the number this year being, it is reported, 900, of whom 798 were able to meet the entrance requirements heretofore prescribed. However, only 200 were admitted, as no more could be accommodated. The new plan places the duty of selecting students in the hands of a committee comprising the dean and two members of the faculty, with the president of the university in consultation. Applications for admission must be filed before May 1. The committee will summon each applicant academically qualified for a personal interview between July 1 and July 15, while applicants living at a distance may appear before representatives of the school at centers near their homes. The interviews, which will be similar in all cases, will be designed to show the applicant's fitness to become a physician and his adaptability to caring for the sick.

MISSISSIPPI

Permanent Injunction Against Herb Doctor.—Chancellor T. Price Dale of Hattiesburg issued a permanent injunction, November 19, against Henry Redmond for practicing without a license following the hearing of a motion by Redmond to dissolve a temporary injunction which was recently granted at the request of the state board of health. Redmond said on the stand that he was born in East India. Evidence was introduced to show that he had no knowledge of the basic medical sciences and that he had very limited general education.

Society News.—Dr. Hugh H. Haralson, Vicksburg, was elected to life membership in the Issaquena-Sharkey-Warren County Medical Society, Vicksburg, December 13, for long and distinguished service to organized medicine in the state. Dr. Joseph Hume, New Orleans, addressed the society on "Calculus of the Kidney and Ureter"; Dr. C. Jeff Miller, New Orleans, on "The Physician's Responsibility in Carcinoma of the Cervix Uteri," and Dr. John J. Shea, Memphis, on "Paranasal Sinusitis"; fifty-eight physicians attended this meeting. Dr. Walter H. Scudder, Marysville, was elected president for 1928.

MISSOURI

Objection to Talks from WHB.—The Clay County Medical Society has voted unanimously to urge the Jackson County Medical Society to use its influence with station WHB (the Sweeney Automotive and Electrical School Broadcasting Station) to discontinue transmitting so-called health and dietetic lectures by Dr. Samuel E. Ball of the Ball Health School, Excelsior Springs, an advertising nonethical institution. The society pointed out that these lectures are being given by one whose license has been revoked by the state board of health. At the conclusion of the talk, it appears that the announcer gives a flattering description of the Ball Health School for the purpose of inducing patronage.

Personal.—Dr. Wilfred E. Chambers, formerly in charge of the veterans' hospital at Excelsior Springs, has assumed the superintendency of the U. S. Veterans' Hospital at Kansas City.——Dr. Luther D. Greene, Richmond, has been appointed a member of the board of regents of the Northwest Missouri State Teachers College.——Dr. Malvern B. Clopton has been elected a member of the board of directors of the university corporation of Washington University, St. Louis.——Dr. Eugene F. Hauck, St. Louis, for forty-three years medical director of the St. Louis Mutual Life Insurance Company, resigned, and has been succeeded by Dr. Cleveland H. Shutt, St. Louis. Dr. Hauck, having reached the age of 71, feels that he is entitled to "take life a little easier."——James B. Macelwane, S.J., M.S., Ph.D., has been appointed dean of the Graduate School of the St. Louis University School of Medicine, St. Louis, to succeed Alphonse M. Schwitalla, S.J.,

Ph.D., who was appointed dean to succeed the late Dr. Hanau W. Loeb.

Society News.—The Clay County Medical Society met recently at the veterans' bureau hospital at Excelsior Springs; the members and their wives were entertained at dinner and the hospital was inspected. Dr. Eugene C. Robichaux, Excelsior Springs, addressed the meeting on "Monarticular, Noncomplicated Exudative Synovitis"; Dr. Albert R. Warner, Excelsior Springs, on "Diabetes"; Dr. James A. Howell, Excelsior Springs, "Staff Diagnosis and Treatment of Gastric Ulcer," and Dr. Thomas F. Neil, Excelsior Springs, "Aortic Aneurysm."——Dr. Fred H. Albee, New York, gave an illustrated lecture before the St. Louis Medical Society, December 6, on "Bone Plasty by Automatic Machinery." At the recent annual election of the society, Dr. Charles H. Neilson, professor of internal medicine at St. Louis University School of Medicine, was elected president for 1928; Drs. Drew W. Luten and Jonas Curtis Lyter, vice presidents, and Dr. Roland S. Kieffer, secretary, reelected. The November 15 meeting of the society was addressed by Dr. Augustin P. Munsch on "Acute Respiratory Infections in Adults," and by Dr. Joseph P. Costello on "Acute Respiratory Infections in Infancy and Childhood."——The St. Louis Medical Society conducted a symposium on treatment of pain in the back, December 13; the speakers were Drs. James Arthur O'Reilly, LeRoy C. Abbott and John Albert Key.——A complimentary dinner was tendered to Dr. Edward H. Skinner at the University Club, Kansas City, December 11, at which the toastmaster was Dr. Jabez N. Jackson, President of the American Medical Association.

MONTANA

Personal.—Dr. Albert E. Stripp has been appointed health officer of the city of Billings.——Dr. Wilson A. Russell, Hardin, has been elected president of the Big Horn County Medical Society.—Dr. Vernon L. Oler was elected president of the Yellowstone Valley Medical Society at the annual election, Billings, November 19. Dr. Cedric H. Nelson was reelected secretary.

NEBRASKA

Councilor Meetings.—The Fifth Councilor District Medical Society met at Fremont, November 9; fifty physicians attended. Among others, Dr. Clyde A. Roeder, Omaha, spoke on "Clinical Consideration of the Alimentary Tract," with lantern slides. Among the speakers at the banquet were Drs. Benjamin R. McGrath, Grand Island, president-elect of the state medical association, and John J. Keegan, dean and professor of clinical pathology, University of Nebraska College of Medicine.——At the Eighth Councilor District meeting, Stuart, October 13, Dr. William D. Lear, Springview, was elected president. Among the speakers were Dr. Louis E. Moon, Omaha, on "Treatment of Hemorrhoids."——The Seventh Councilor District Medical Society held its annual meeting, November 3, Superior; thirty-two physicians were present. The Nuckolls County Medical Society was host at a dinner. Dr. V. V. Smrha, Milligan, was elected president; Dr. George M. White, Ingleside, read a paper on "Classification of Dementia Praecox."——The Republican Valley and Tenth Councilor District Medical Society met at Hastings, October 27, at the state hospital. The president's address by Dr. James M. Willis, McCook, was on "Early Tuberculosis"; among others, the state epidemiologist, Dr. Clarence H. Kinnaman, spoke on "Health Examinations."

NEW HAMPSHIRE

Gile Hall.—Dartmouth's new dormitory, being constructed on Tuck Drive at Hanover, will be known as "Gile Hall" in memory of the late Dr. John M. Gile, who was for many years dean of the Dartmouth Medical School and a trustee of the college.

Consideration of Medical Defense.—Dr. Thomas W. Luce, Portsmouth, addressed the New Hampshire Medical Society at the Derryfield Club, Manchester, November 15, on medical defense. The society voted unanimously in favor of cooperating in an effort to secure the adoption of the state of Maine's plan of medical defense for New Hampshire. The state president, Dr. Emery M. Fitch, is visiting county societies urging their consideration of this plan; to date Coos and Rockingham counties have instructed their delegates to the state meeting to support adoption of this plan when it comes up at the annual meeting at Manchester, May 15, by which time it is expected that the other counties will follow their example.

NEW YORK

Society News.—Dr. Warren Wooden's presidential address before the annual meeting of the Monroe County Medical Society, Rochester, December 20, was on "The Disease Factor in Civilization" (an illustrated historical talk).——Dr. Hugh Chaplin, Columbia University College of Physicians and Surgeons, among others, addressed a child health conference at Rochester, December 9, on "Adequate Prescribed Health Examination Program."

Director of County Laboratory Removed.—The board of managers of the Cattaraugus County Laboratory has adopted the following resolution:

WHEREAS, It is the judgment of the Board of Managers for the County Laboratory that the services of the present Director of the Laboratory, Dr. Joseph P. Garen, are no longer required: now therefore be it

Resolved, That the appointment of the said Dr. Joseph P. Garen, Director of the Laboratory, be, and the same is, hereby revoked; further

Resolved, That the said Dr. Joseph P. Garen be, and he is hereby, relieved of his duties as such Director of the Laboratory on Dec. 31, 1927.

The board of managers is composed of the county board of health and the director of the health demonstration which is being conducted with the assistance of the Milbank Memorial Fund. The director of the health demonstration is also the county health officer. Dr. Garen is president of the Cattaraugus Medical Society.

Recommendations of Committee in Cattaraugus County.—The committee on public health and public relations of the Cattaraugus County Medical Society has made recommendations concerning a county health department to be formally presented by the society to the supervisors of the county. It was recommended, says the *New York State Medical Journal*, that as the terms of the present members of the county board of health expire or terminate by resignation, physicians be appointed to these positions until a total of five physicians is reached, and that such physicians as may be appointed be nominated by the county medical society; that the county board of health appoint an advisory council to serve without remuneration and that, among others, ten physicians nominated by the medical society shall be on the council; that the board of managers of the county sanatorium and the board of managers of the county laboratory be abolished and their duties be incorporated in those of the county board of health if permitted by law; that should any foundation, fund, association or other philanthropic organization desire to disburse money for advancing public health by demonstrating the advantages thereof, the advisory council of the board of health, following proper action by the board of supervisors or the board of health, be the supervising agent in such disbursement or demonstration, and that for this purpose the advisory council may be enlarged to include two representatives of the fund or other organization contributing the money, one representative of the committee on public health of the state medical society and one representative of the state department of health; that the position of director of the County School Hygiene District be abolished; that at the end of two years a formal hearing be held by the board of supervisors and if the county board of health be then considered unnecessary, it be abolished, and that the board of health be asked to appoint a county health officer who shall be a physician within Cattaraugus County with experience in preventive medicine and practical knowledge acquired through private practice in the county.

New York City

Hospital News.—Physicians are invited to send a limited number of cases of pernicious anemia to Mount Sinai Hospital, where a special study is being made of the liver extract treatment, making arrangements in advance over the telephone, Atwater 2026.——Under the will of the late Dr. William P. Thompson, emeritus professor of medicine, Cornell University Medical College, the Reconstruction Hospital will receive $50,000.

Society News.—Dr. John Shelton Horsley, Richmond, Va., addressed the Society of Alumni of Bellevue Hospital at a dinner, December 7, at the Yale Club, Forty-Fourth Street and Vanderbilt Avenue, on "Some Underlying Principles of Intestinal Surgery."——The American Society for the Control of Cancer celebrated the completion of its campaign for a million dollar endowment fund at dinner at the Savoy-Plaza, December 9. Among others, Dr. Howard C. Taylor, president of the society, gave an address.

Carbon Monoxide in New York Air.—The results of an investigation made by the city department of health, cooperating with the U. S. Public Health Service, of the amount

of carbon monoxide in the air in various localities in New York was announced, December 6. Samples of air in busses of the city, Health Commissioner Harris said, showed from 14 to 102 parts of carbon monoxide per million, and the samples of street air examined showed from 24 to 284 parts per million. Precautions were taken in these tests to overcome certain fallacies which had been made in previous studies.

Personal.—Dr. Haven Emerson addressed the Council of Social Agencies, Reading, Pa., December 16, on "Public Health Work and the Relationship Between the Medical Profession and Health Agencies."——Dr. Charles H. Nammack has been appointed attending physician to the fourth medical division of Bellevue Hospital.——Dr. Harold D. Meeker has been appointed surgical director to the Reconstruction Hospital.——Dr. Walter M. Brickner is relinquishing the editorship of the *American Journal of Surgery* with the December issue; Dr. Brickner has conducted this journal since its establishment twenty-three years ago.

Social Hygiene Program.—The directors of the New York Tuberculosis and Health Association announce that in harmony with recent developments of the activities of the association, a social hygiene program has been adopted. There has been no local social hygiene association in New York, the announcement says, up to this time. The board of directors decided to undertake this work, as it has repeatedly found itself facing situations in which its health efforts would have been greatly facilitated had there been an organized social hygiene agency. Among the objects of the new service will be (1) to discover cases of venereal disease and keep them under treatment by aiding physicians, clinics, hospitals and other agencies; (2) to discourage treatment by unqualified practitioners; (3) to support the health department in securing the reporting of venereal disease, and (4) to promote health education in cooperation with sex educational agencies. The social hygiene service of the New York Tuberculosis and Health Association will be affiliated with the American Social Hygiene Association. A committee, composed of physicians and laymen familiar with the work of the American Social Hygiene Association, is to be appointed to direct the work.

OHIO

Society News.—Dr. Theodore A. Willis, Cleveland, addressed the Toledo Academy of Medicine, December 2, on "Backache."——Dr. Lyman F. Huffman, Cleveland, addressed the Trumbull County Medical Society, Warren, December 15, on "Progress in the Treatment of Prostatic Obstruction."——Dr. Isa C. Teed Cramton, Burton, was reelected secretary of the Geauga County Medical Society, December 7, for the sixteenth consecutive time with the exception of the year 1926, when she was present. Dr. William S. Hawn, Burton, was elected president for 1928.

Personal.—Dr. Charles S. Cavett was elected mayor of North Baltimore, November 8.——Dr. James R. Tillotson has been elected president of the Allen County Academy of Medicine, Lima, for the ensuing year.——Dr. Earl A. Martin, Washington, D. C., has been appointed superintendent of the Clark County Tuberculosis Sanatorium to succeed Dr. Tedrow S. Keyser, Springfield, resigned. Dr. Martin, who at present is connected with the U. S. Veterans' Bureau, is a native of Ohio and a graduate of Western Reserve University School of Medicine, Cleveland.——Dr. Bruce B. Barber, Ashley, has been elected health officer of Delaware County to succeed Dr. Albert J. Pounds, who has held the position for about seven years. Dr. Barber will assume his new duties, January 1.——Dr. Walter J. Weiser has been reappointed health officer of Marion for next year.

OREGON

Society News.—The Jackson County Medical Society met at the home of Dr. Charles A. Haines, November 2; there was a discussion of the typhoid epidemic at Medford, and Dr. Ralph E. Green of Medford spoke on goiter. The outbreak of thirty-one cases of typhoid at Medford has been traced, according to the *Medical Sentinel*, to the Hilton Dairy Farm on the Pacific Highway, a short distance from Medford.

Hospitals Consolidate.—The International Bible Mission has bought Mercy Hospital in Eugene from the Sisters of Mercy. It will be consolidated with the Pacific Christian Hospital, the two units being designated as "The Pacific Christian Hospital on Hilyard Street" and the "Pacific Christian Hospital on College Hill," both being under one staff of physicians and one board of administration and having only one school for nurses. The combined capacity will be 162 beds.

Ralph Shadduck and Others Fined.—Mr. Ralph Shadduck of Portland was found guilty, October 26, of practicing medicine without a license and fined $200. Shadduck is reported to have operated a "Radiant Health Food Store"; to have traveled over the state giving lectures on health and diet, and to have treated patients with various diseases. Other illegal practitioners recently fined whom the state board of medical examiners has had brought to trial are W. H. McKinney, Weston; Wong Dan, Medford; A. W. Grater, Redmond, and W. H. Taylor, Roseburg.

WASHINGTON

Hospital News.—The medical library of the late Dr. Arthur Clarke Johnson has been given by his widow to St. Luke's Hospital, Spokane, where a room has been set aside to be known as "The Arthur Clarke Johnson Memorial Library."

Society News.—Pierce County Medical Society, Tacoma, held a symposium on infantile paralysis, November 22, the speakers being Drs. Gustav A. Wislicenus, Robert S. Miles, Jr., and William R. Leverton.——Dr. James Tate Mason, Seattle, addressed the Walla Walla Valley Medical Society, November 12, on peptic ulcer and goiter.——Dr. Emory J. Rhoades, Walla Walla, was elected president of the society for the ensuing year.——Dr. Frederick Epplen, Spokane, formerly president of the Spokane County Medical Society, has moved to Seattle.

WISCONSIN

Court Orders License Revoked.—Dr. Leo O. Voorus, Milwaukee, pleaded guilty, recently, to performing an illegal operation, and was fined $500 in municipal court, according to the *Wisconsin Medical Journal*. This was the second offense; the judge ordered revocation of Dr. Voorus' license to practice medicine in Wisconsin.

Personal.—Dr. Stephen Cahana, Milwaukee, has been appointed a member of the state board of health for a seven year term, succeeding Dr. Otho A. Fiedler, Sheboygan.——Dr. Charles W. Blanchard, Janesville, who was sentenced in 1926 to from four to six years in prison for performing an illegal operation, has been pardoned by the governor.

Society News.—At the December 13 meeting of the University of Wisconsin Medical Society, Dr. Edward Evans, medical preceptor, La Crosse, discussed the "Present-Day Practitioner and the History of Medicine."——Dr. Ralph C. Hamill, assistant professor of nervous and mental diseases, Northwestern University Medical School, Chicago, addressed the Brown-Kewaunee County Medical Society, recently, on "Diseases of the Spinal Cord."——Drs. Henry W. Meyerding and William H. D. Goeckerman, Mayo Clinic, Rochester, Minn., addressed the Chippewa County Medical Society, November 14, on "Fractures" and "Itching Skin in Diagnosis," respectively.——Dr. Franklin C. McLean, professor of medicine, University of Chicago, addressed the Milwaukee Academy of Medicine, November 22, on "Some Problems in Edema"; Dr. Francis D. Murphy, Milwaukee, addressed the academy, November 8, on "Chronic Nephritis With and Without Edema."——The State Medical Society of Wisconsin will hold its next annual meeting in Milwaukee, Sept. 11-14, 1928.

GENERAL

Society News.—The twenty-fourth international convention of the Alpha Kappa Kappa Medical Fraternity will be held at Galveston, December 29-31, with the University of Texas acting as hosts.——The next annual meeting of the National Tuberculosis Association will be at Portland, Ore., June 18-20.

The Nation's Health Transferred.—The *Nation's Health*, which for a few years has been published in Chicago, has been transferred with its contracts, lists, good will and other assets to the American Public Health Association to be published with the *American Journal of Public Health*. The publishers of the *Nation's Health* will undertake the publication of the *Nation's Schools*, which will be devoted to the discussion of matters affecting the building, equipment and administration of public, private and parochial school superintendents, and the business managers of colleges and universities.

Safety Association for Miners.—There are 176 chapters of the Holmes Safety Association in twenty-six states and a

total membership of 8,387, according to the U. S. Bureau of Mines, with which the association is closely affiliated. The purpose of the organization is to improve the health, safety conditions and general welfare of persons connected with the mining, metallurgic, petroleum, quarrying and allied industries. The monthly meetings comprise talks on safety or allied subjects, and entertainment features with reports in some chapters of committees. Alabama leads the states in activities, having thirty-eight chapters; Illinois follows with twenty-eight, and Pennsylvania with twenty-four. This organization is not intended to supplant any other community organization but rather to supplement such other activities or to aid in correlating them. The president of the parent organization, Scott Turner, is now the director of the bureau of mines. Persons interested in establishing chapters of the Holmes Safety Association should apply to the bureau, 4800 Forbes Street, Pittsburgh, or to the U. S. Bureau of Mines, Washington, D. C.

Death of Dr. Kiernan.—John Andrew Kiernan, D.V.S., chief of the tuberculosis eradication division, U. S. Bureau of Animal Industry, died suddenly, December 13, of heart disease, aged 54. Dr. Kiernan had a long and distinguished record in veterinary medicine. He entered the bureau of animal industry in 1896, took an active part in the eradication of foot and mouth disease in New England in 1902, and was appointed chief of the tuberculosis eradication division in 1917, since which time it has become one of the most important branches of the bureau of animal industry. A campaign of testing cattle with tuberculin throughout the country has been carried on under Dr. Kiernan's guidance; more than 42,000,000 cattle have been tested since the cooperative campaign began by states and the federal government. The removal and slaughter of diseased animals has added greatly to the safety of the country's milk supply. Dr. Kiernan took an active part in the work of the American Veterinary Medical Association, serving on important committees and in other official capacities.

Bills Introduced Into Congress.—Since Congress convened, bills of special interest to physicians have been introduced as follows: H. R. 16, to regulate the practice of osteopathy in the District of Columbia, one feature of which would be the creation of a separate board of osteopathic examiners for the District of Columbia; H. R. 5763, to regulate the practice of chiropractic, creating a board of chiropractic examiners for the District of Columbia, and H. R. 261, to grant hospital treatment to postal employees suffering from tuberculosis, nervous diseases or mental occupational ailments in government owned hospitals. Senate bill 871 would provide for the establishment of a national institution of health, authorize an increase of appropriations for the hygienic laboratory, and authorize the government to accept donations for use in ascertaining the cause, prevention and cure of diseases affecting human beings. House bill 487 would prevent the manufacture, sale or transportation of adulterated, misbranded, poisonous or deleterious foods, drugs, medicines and liquors. House bill 5766 would provide for the coordination of the various public health activities of the government. Senate bill 1602 would amend the act prohibiting the importation and use of opium for other than medicinal purposes. Senate bill 1653 would provide for compensation for the accidents or death of employees in certain designated occupations in the District of Columbia.

American Association for the Advancement of Science.—This association will hold its annual meeting in Nashville, Tenn., December 26-31, under the presidency of Arthur A. Noyes of the California Institute of Technology. The various sections are designated by letters of the alphabet from A to Q. Section N (the medical section) will hold a joint morning session with Section C (chemistry), the subject under discussion being "Contributions of Other Sciences to Medicine." Prof. Edward C. Kendall, D.Sc., University of Minnesota, will talk on "Contributions of the Chemist to Our Knowledge of Biologic Oxidations"; Dr. George H. Whipple, dean and professor of pathology, University of Rochester School of Medicine, "Contributions of the Biochemist to Our Knowledge of Blood in Formation and Within the Body"; Dr. Alfred F. Hess, clinical professor of pediatrics, University and Bellevue Hospital Medical College, "Contributions of Chemistry, Physics and Pathology to Our Understanding of Rickets"; Laurence G. Wesson, Ph.D., Vanderbilt University School of Medicine, "Relationship of Plant Vitamins to Human and Animal Metabolism," and Dr. Ales Hrdlicka, Washington, D. C., "Contributions of Anthropology to Medicine." The afternoon session will be a joint meeting with the American Public Health Association on "Medical Problems of the South," being opened by the retiring vice president of the section, Dr. Rufus I. Cole of the Rockefeller Institute for Medical Research, New York, who will speak on "The Interrelationship of the Medical Sciences." Other speakers will be Drs. Arthur M. Stimson, U. S. Public Health Service, Charles C. Bass, Tulane University of Louisiana School of Medicine, New Orleans, and Dr. Robert S. Cunningham, Vanderbilt University School of Medicine, who will talk on malaria, parasitologic problems and tuberculosis. Section N will have its headquarters at the Andrew Jackson Hotel, Sixth Avenue and Bedrick Street. The chairman of the local committee on arrangements is Dr. Waller S. Leathers, professor of preventive medicine and public health, at Vanderbilt.

Bequests and Donations.—The following bequests and donations have been announced recently:

The nurses' alumni societies of the following New York hospitals each $3,000, by the will of the late Frederic L. Lavanburg: Roosevelt, Presbyterian, Post-Graduate, New York, Mount Sinai, St. Luke's and St. Vincent's.

Long Island College Hospital, $100,000 for the Hoagland Laboratory by the will of the late Miss Ella J. Hoagland whose father, the late Dr. Cornelius N. Hoagland, founded this laboratory.

Christ Hospital, Cincinnati, $500,000 to the building fund campaign by Mr. James N. Gamble.

Jewish Hospital, St. Louis, $300,000 for the construction of a nurses' home in memory of the late Moses Shoenberg by his widow and son.

University of Pennsylvania, Philadelphia, and Harvard University, Boston, each $150,000 from the Nina Lea estate to endow professorships in memory of Miss Lea's father, Henry Charles Lea.

Jefferson Medical College, Philadelphia, the Hospital of the University of Pennsylvania, Philadelphia, Bryn Mawr (Pa.) Hospital, Pennsylvania Museum and School of Industrial Art, Philadelphia, are to receive the bulk of the estate of Mr. Frank Thorne Patterson on the death of his widow. It is estimated that these institutions will divide more than $2,000,000.

Brooklyn Hospital, Brooklyn, N. Y., $5,000, by the will of the late Hannah Gould Mynderse.

United Hospital, Port Chester, N. Y., $20,000, by the will of the late Ormsby M. Mitchell.

New York Foundling Hospital, Bellevue Hospital, New York Post-Graduate Medical School and Hospital and Mount Sinai Hospital, all of New York, each $5,000, by the will of the late Marmaduke Richardson.

Medical and Chirurgical Faculty of Maryland for additions to the Dr. Charles Frick Library, Hospital for Consumptives of Maryland and the Hospital for Women of Maryland, each $20,000, and the Instructive Visiting Nurses' Association, $15,000, by the will of James S. Frick, Baltimore.

American Otological Society, New York, and Johns Hopkins University Medical School, Baltimore, each $10,000, by the will of the late William John Curtis, New York.

Brooklyn Hospital, $10,000, Industrial Home for the Blind, New York, and the Home of St. Giles the Cripple, each $5,000, by the will of Mrs. Annie M. Pluygers.

Lenox Hill, Seton, Montefiore, Mount Sinai and Beth Israel hospitals, all of New York, each $5,758, by the will of the late William Hartfield.

Hospital for Ruptured and Crippled, New York Skin and Cancer Hospital, St. Luke's Hospital, all of New York, each $4,000, by the will of the late Ellen S. Bates.

Good Samaritan Hospital, Cincinnati, $10,000, by Mr. and Mrs. William E. Fox, Cleves, to furnish new rooms.

The Shelby County Memorial Hospital, Shelby, Ohio, $5,000, by the will of the late Mrs. Harriet Stephenson.

Middletown Hospital, Middletown, Ohio, $8,800 from the estate of the late Arthur D. Lefferson.

Hillsboro Hospital, Hillsboro, Ohio, a gift of $1,000 from Mrs. Nannie P. Brown, Pittsburgh.

Lying-In Hospital, New York, one fourth of a trust fund of $706,704, by the will of the late Louis V. Bell.

Mount Sinai Hospital, New York, $10,000, and the school of nursing, $5,000, by the will of the late Gustav Blumenthal.

Harrisburg Hospital, Harrisburg, Pa., $5,900, by the will of George Nauman, Pittsburgh.

Jewish Hospital Association, Philadelphia, $75,000, by the will of Charles C. Shoyer for the erection of a memorial maternity wing.

Jewish Hospital of Brooklyn, $10,000, by the will of the late Aaron Levy.

St. Joseph's Hospital, Stockton, Calif., $10,000 from Mr. James H. Sharon in memory of his brother for the endowment of a room.

Jefferson, Howard, Samaritan, Garretson, American Oncologic and Temple University hospitals, all of Philadelphia, each about $1,000 as their share of the proceeds of the Philadelphia Indoor Horse Show, about November 8.

Fifth Avenue Hospital, New York, $30,000, under the will of the late James G. Wentz.

Gynecologic department of the Woman's Medical College of Pennsylvania, Philadelphia, $5,000 toward a fund to endow the department by Miss Vida Hunt Francis, chairman of the committee, as a tribute to her mother.

Marks Nathan Orphans' Home, $100,000, by Morris Katz and his son Samuel, to be set aside as a trust fund, the income to be used for the care and guidance of inmates of the institution.

St. Anthony and St. Francis hospitals, Columbus, Ohio, each $500, by the will of the late Herman Falter.

Community Hospital, Fremont, Ohio, $5,000, from Charles R. Richards, late professor at Princeton University.

New York Academy of Medicine, New York, $5,000, by the will of the late Alice L. A. Goffe.

Stamford Hospital, Stamford, Conn., $400,000, by the will of the late William H. Judd.

By the will of the late Ruleman Muller, New York, a residuary bequest of $250,000 to a hospital or hospitals treating indigent cancer patients to be selected by his trustees.

Fifth Avenue Hospital, New York, $10,000, and Hospital for Ruptured and Crippled, New York, $1,000, by the will of the late Mrs. Belle Day Wiltsie.

CANADA

Society News.—Dr. Frank H. Lahey, Boston, addressed the Academy of Medicine of Toronto, December 6, on "Exophthalmic Goiter."——At the January 3 meeting of the Vancouver Medical Association, Vancouver, Dr. Harry H. Pitts will speak on "Pathology of the Thyroid Gland," and Dr. Theodore H. Lennie, "Surgery of the Toxic Goiter."

Personal.—Dr. Clyde S. Marshall has been appointed provincial psychiatrist by the Nova Scotia government.——At the semicentennial of the University of Manitoba in October, Dr. Edward W. Montgomery and Dr. D. A. Stewart, among others, received the honorary degrees of LL.D.——Prof. G. Ramon of the Pasteur Institute, Paris, is at present a guest research worker in the Connaught Laboratories, University of Toronto.

Physicians to Examine Emigrants in Europe.—The following physicians have been selected by the department of health as inspectors in European cities of emigrants about to leave for Canada: Cedric H. Archibald, Toronto; Charles N. Arpin, Regina; Georges Audet, Quebec; T. D. Bain, Toronto; J. L. Cock, Halifax; George C. Currie, Regina; Harold D. Delamere, Toronto; John S. Douglas, North Bay; W. Egan, London, England; George B. Ferguson, Hamilton; Clarence W. Hames, Toronto; Frederick W. Leech, North Bay; William B. MacDermott, London; Margaret Parks, transferred from Immigration Medical Service, Quebec, to London; R. Rolland, Montreal; Alexander Turnbull, Flesherton; F. X. Duplessis, Paris, France (from Montreal), and A. Savoie, London.

Another Year of Graduate Instruction.—The *Canadian Medical Association Journal* announces that the Sun Life Insurance Company has granted $30,000 for the third time to continue the extramural postgraduate instruction which the medical association has successfully carried on for two years. More than 400 instructors have assisted in this work by giving clinics, demonstrations and addresses before an aggregate attendance of 35,000 physicians in every province of the dominion and in Newfoundland. This service has been appreciated highly by the practitioners, many of whom have driven hundreds of miles to attend the meetings, some bringing difficult cases to be seen by the visiting clinicians. The Canadian Medical Association is proud of its achievement and appreciative of the interest of the Sun Life Insurance Company and its generous appropriation of funds.

HAWAII

Personal.—Dr. Edward S. Goodhue, Kaunakakai, Molokae, who recently underwent a serious operation, has given over most of his practice to his brother, Dr. William J. A. Goodhue, who was for many years in charge at the leper settlement. The Territorial Medical Association sent a resolution to Dr. Goodhue congratulating him on his recovery.——Dr. Walter McArthur, Seattle, Wash., has been appointed medical director of the leper settlement in place of Dr. Allen B. Potter, resigned.——Dr. Gideon Van Poole has returned from several months' study in Vienna.

FOREIGN

Cholera in Bengal.—An Associated Press dispatch, November 30, reported 3,703 cases of cholera in the province of Bengal, India, with 2,139 deaths for the week ending November 19. All parts of the province were said to be affected except Calcutta.

Radium Bank Proposed.—The establishment of a "radium bank" possessing 5 Gm. of radium, a quantity of which will be available to lend to physicians throughout Australia, has been proposed in Sydney. The American Society for the Control of Cancer says that each cancer center in Belgium is required by law to have at least 1 Gm. of radium; such a requirement is feasible in that country because the entire output of radium in the world is now in the hands of a Belgian company. A supply of radium is one of the recognized needs in the treatment of cancer. Some hospitals in the United States are well provided, but some of the largest and best have none.

Sir Archibald Garrod Resigns.—Sir Archibald E. Garrod, regius professor of medicine at Oxford University, England, has tendered his resignation, effective, December 31; Sir Archibald, who succeeded Sir William Osler in that position in 1920, delivered the Huxley Lecture, November 24, at Charing Cross Hospital on "Recent Advances in Science in Relation to Medicine and Surgery." Sir Edward Farquhar Buzzard, who has been appointed to succeed Sir Archibald, was president of the section of neurology and psychology of the British Medical Association in 1926, is a representative of the Royal College of Physicians of London on the general medical council and is physician extraordinary to the king.

International Congress on Occupational Diseases.—The Permanent International Committee on Occupational Diseases has authorized the organization of the fourth international session to be held at Lyons, France, April 3-6, 1929. Prof Etienne Martin of the Institute of Legal Medicine of Lyons and Professors Agasse-Lafont and Kohn-Abrest, Paris, with the approval of the executive, will designate the persons to present the reports before the session. The subjects before the conference will be silicosis; cataract of occupational origin; endocrine system, forms of poisoning, and communications relating to results of inquiries so far unpublished. Letters should be addressed to Professor Martin, or to the secretary of the committee, Hygiene Service, International Labor Office, Geneva.

Diploma in Pediatrics.—The University of Florence, Italy, has announced a special course in clinical pediatrics leading up to a diploma as a specialist in pediatrics. The course extends over a period of two years, beginning Nov. 5, 1927. Those enrolled will pursue the university course in clinical pediatrics, including the special colloquies and the special practice work. At the end of the first year, they will be given an examination to determine the progress made, and at the close of the second year, a final examination, consisting of a discussion of a written thesis and of a clinical test. The course is open only to graduates in medicine and surgery. The annual tuition is 900 liras (about $54); laboratory fees, 200 liras ($12). Inquiries should be sent to the Segretaria della Facoltà di Medicina, Via degli Alfani 33, Florence, Italy.

Prize to Encourage Research in Obstetrics.—The council of the British Medical Association has decided that no specific subject shall be prescribed for the Katherine Bishop Harman prize for 1928, but that competitors shall be free to choose the work they wish to present. Mrs. Harman of London presented the sum of about $5,000 to the association for the establishment of a prize for the encouragement of research into the disorders incident to maternity. Its value is to be the net annual income of the capital fund over a period of two years, and the first award will be in 1928. The council is to judge the work presented, and any medical practitioner registered in the British Empire is eligible for the competition. Essays must be forwarded to the secretary, British Medical Association House, Tavistock Square, W C 1, London, not later than Dec. 31, 1927.

Personal.—At the annual meeting of the Royal Academy of Medicine in Ireland, October 14, Sir William Taylor was elected president, and Louis L. Cassidy, the secretary for foreign correspondence.——At the recent annual meeting of the Royal College of Physicians of Ireland, Dr. William A. Winter was elected president.——Dr. Charles Y. Pearson has resigned the chair of surgery at University College, Cork, Ireland, on attaining the age limit.——The late Dr. Adrian Stokes, London, who died of yellow fever in Africa, left in his will $29,000 to a fellow research worker in Guy's Hospital to aid in carrying on the work which was being done at the time of his death.——Sir Berkeley Moynihan was presented with a portrait of himself, November 7, in connection with his retirement from the staff of the Leeds Royal Infirmary; the lord mayor of Leeds made the presentation.——Dr. Alfred Adler, Vienna, Austria, will return to New York to give a series of lectures on psychology, February 14-March 22.

Annual Dinner of British Medical Association.—The sixth annual autumn dinner of the British Medical Association was held at the Hotel Victoria, London, October 12, with the chairman of the council, Dr. Henry B. Brackenbury, presiding. The first purpose of the dinner, the *British Medical Journal* notes, was to honor the retiring president of the association, Mr. Robert G. Hogarth, and the chairman of the council, Sir Robert Bolam. The two cabinet ministers present were the minister of health, Neville Chamberlain, and the secretary of state for India, the Earl of Birkenhead. The other official guests numbered about sixty. Following the toast to the king, the chairman proposed a toast to the retiring officers. Mr. Chamberlain responded to the toast "The Common Health," and the Earl of Birkenhead's response was to the toast "The Guests." Sir Ewen Maclean proposed the health of the chairman, to which Dr. Brackenbury responded. Music was provided during the dinner, and the proceedings closed with the singing of Auld Lang Syne.

Government Services

Army Personals

Lieut. Col. William L. Little has been detailed for duty as instructor with the National Guard Medical Corps Units, Ninth Corps Area, with station at San Francisco.——Col. Bailey K. Ashford has been ordered to report to the president of the army retiring board, Washington, D. C., for examination. Colonel Ashford is now at the Walter Reed General Hospital.——Capt. Richard J. Newman has been ordered to duty at Fort Reno, Okla.——Major William J. Rice, Fitzsimons General Hospital, Denver, and Capt. Richard T. Arnest, Fort Huachuca, Ariz., have been ordered to sail from San Francisco about March 29, 1928, for duty in the Philippine Islands; Major Joseph W. Bauman, on completion of his present tour of foreign service in the Philippines, will be assigned to duty at Fort Lewis, Wash.; Major Raymond A. Kelser, veterinary corps, to the Army Medical School, Washington, D. C., and Capt. Charles W. Metz to Fort Huachuca, Ariz.——Major Arthur P. Hitchens is assigned to duty at the army medical school, Washington, D. C., on completion of his tour of foreign service in the Philippine Islands and of the four months' leave of absence that has been granted to him.——Lieut. William C. Furr having been found physically disqualified for the duties of captain at his examination for promotion, the reason of disability incident to the service, his retirement was announced, effective, November 15.——Capt. Francis E. Weatherby, by direction of the President, is excepted from the provisions of the national defense act requiring duty with troops, effective, Feb. 1, 1928.

Navy Personals

Lieut. (j. g.) Gunnar Jelstrup has tendered his resignation as an officer of the Navy.——Lieuts. Charles P. Archambeault and Herbert L. Barbour have been found qualified for promotion to the rank of lieutenant commander, and Lieut. (j. g.) Winfred P. Dana to the rank of lieutenant.——The next class at the navy medical school, Washington, D. C., will convene, Jan. 27, 1928; a class will graduate, Dec. 24, 1927. The officers in the present class will be assigned to duty as follows: Lieuts. (j. g.) Clyde M. Longstreth and Albert Ickstadt to the naval air station, Pensacola, Fla.; Lieut. Francis P. Field to the U. S. S. *Rochester;* Lieut. Comdr. Otto W. Grisier to the fifth regiment of marines, Nicaragua; Lieut. Frank W. Quin to the Asiatic station; Lieut. Royal A. McCune to the ammunition depot, Yorktown, Va.; Lieut. Harvey E. Robins to the naval training station, Great Lakes, Ill.; Lieut. Comdr. William D. Small to the naval hospital, Norfolk, Va.; Lieut. John R. Smith to the naval hospital, Boston; Lieut. Ross U. Whiteside to the U. S. S. *Concord,* and Lieut. H. Weber to the naval air station, Lakehurst, N. J. The following additional transfers of officers have been recommended by the Surgeon General's office: Lieut. Comdr. Joseph H. Durrett to navy recruiting station, Dallas, Texas; Lieut. Comdr. Stephen R. Mills to the navy yard, Philadelphia; Lieut. Comdr. Frederick R. Hook to the naval hospital, New York; Comdr. Charles J. Holeman to the U. S. S. *Colorado;* Comdr. Paul T. Dessez to the navy recruiting station, Springfield, Mass.; Comdr. Chester M. George to the U. S. S. *Pennsylvania;* Comdr. Alexander B. Hayward to the naval hospital, San Diego, Calif.

Annual Report of Public Health Service

A review of health conditions, so far as federal duties and responsibilities are concerned, is given in the annual report of the Surgeon General of the U. S. Public Health Service. The health of the people of the United States was generally good. The death rate for all causes for the calendar year 1926 in twenty-eight states was 12.1 per thousand of population. This was slightly higher than the rate for 1925, which was 11.7.

The United States escaped the epidemic of influenza which swept over Europe during the winter of 1926-1927; the few cases reported here were mild. Typhoid declined during the year 1926, and the case and death rates for diphtheria were the lowest on record. Diphtheria showed a small increase, however, during the first part of 1927. The general downward trend in diphtheria is considered the result of the use of antitoxin and toxin-antitoxin immunization. The death rate for tuberculosis continued its decline, and heart disease, diabetes and nephritis, which has been increasing in recent years, showed lower rates than were expected. While smallpox decreased during the year 1926 in some localities it existed in severe form. In a total of 30,450 cases of smallpox reported during the year from forty-one states, there were 380 deaths. It was most fatal on the Pacific Coast, which section reported only one fifth of the total number of cases, but two thirds of the number of deaths. The infant mortality rate, which is considered an important index of the efficiency of public health work, in 1926 was 72.8 for twenty-eight states, as compared with 71.5 for 1925. The medical examination of applicants for immigration visas in foreign countries of origin, first inaugurated in 1925, in England, Scotland and Ireland, was extended during the last year to Germany, Sweden, Norway, Poland and Denmark. The advantages of the system to prospective immigrants to the communities of origin and to the transportation companies resulted in additional requests to the state department for the extension of the plan to other countries. These medical examinations of applicants for immigration visas were made by U. S. Public Health Service officers at twenty American consulates in eleven countries; out of 148,539 applicants examined, 12,974, or 8.75 per cent, were found to have mental or physical disabilities, and 6,580, or 4.43 per cent, were refused visas for medical reasons. Aid was given in localities of Florida devastated by the hurricane of September, 1926, and the public health service cooperated with the states and the American Red Cross in emergency relief work in the Mississippi flood area. Within ten days from the beginning of the flood emergency, fourteen public health service officers trained in emergency health work and familiar with the localities affected by the flood were in the field to assist state health authorities. Arrangement has been made for a continuance of this cooperation in providing public health protection to the inhabitants of the devastated areas during the period of rehabilitation. Further studies on narcotic drug addiction indicate a reduction in the number of habitués, and confirm the opinion previously arrived at that addiction is, in general, a symptom of neuropsychopathic make-up.

Changes in Personnel of the Veterans' Bureau

The following changes in personnel are noted in the December, *U. S. Veterans' Bureau Medical Bulletin:*

HOSPITALS

Dr. Marion P. Bailey, resigned at Bronx, N. Y.
Dr. Howard W. Barker, resigned as medical officer in charge, Jefferson Barracks, Missouri.
Dr. Lewellys F. Barker, reappointed as part-time specialist in internal medicine at Washington, D. C., diagnostic center.
Dr. Parker G. Borden, reinstated as ward surgeon-specialist in neuropsychiatry at Philadelphia.
Dr. William J. Byles, reinstated as specialist in tuberculosis at Fort Lyon, Colo.
Dr. Elmer L. Crouch, transferred from Tacoma, Wash., to Palo Alto, Calif.
Dr. William C. Davis, transferred from Fort Bayard, N. M., to Tucson, Ariz.
Dr. Harold E. Foster, reinstated at Sheridan, Wyo.
Dr. Orren P. Goodwin, appointed at Algiers, La.
Dr. Garrett V. Johnson, transferred from Minneapolis to central office.
Dr. Kenneth W. Kinney, resigned at Washington, D. C., diagnostic center.
Dr. Wooten D. Lightfoot, transferred from Milwaukee regional office to Palo Alto, Calif.
Dr. Robert B. Maddox, resigned from physical therapy subdivision, medical service, central office.
Dr. Smith J. Mann, transferred from Tucson, Ariz., to Fort Bayard, N. M., as clinical director.
Dr. Millard T. Nelsen, resigned as part-time specialist—dual capacity at Tacoma, Wash., and American Lake, Wash.
Dr. John N. Perkins, transferred from Sheridan, Wyo., to Tacoma, Wash.
Dr. Maxim Pollak, resigned as full-time pathologist at Fort Bayard, N. M.
Dr. Gardner S. Reynolds, resigned at Minneapolis.
Dr. Charles M. Schiek, transferred from Sheridan, Wyo., to Knoxville, Iowa.
Dr. Isaac R. Wagner, transferred from Edward Hines Junior, Maywood, Ill., to Jefferson Barracks, Missouri, as medical officer in charge.
Dr. Thomas A. Wayland, reinstated as tuberculosis specialist at Outwood, Ky.
Dr. Horace J. Whitacre, reappointed at Tacoma, Wash., and American Lake (dual capacity as part-time attending specialist in surgery).

REGIONAL OFFICES

Dr. Clyde E. Barton, transferred from Burlington, Vt., regional office to rating section, central office.
Dr. John E. McDill, resigned as part-time medical examiner at Jackson, Miss.
Dr. Frank A. Woodward, resigned as full-time medical examiner at Helena, Mont.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Dec. 2, 1927.

The Falling Birth Rate

The birth rate of England and Wales for the third quarter of the present year is the lowest ever recorded in any third quarter, not excluding the years of war. Thus, for the first time, the exceedingly low rates obtained during the war have been surpassed. The idea that the "war birth rate" was a purely temporary phenomenon can no longer be entertained. The birth rates in England and Wales in third quarters since 1913, per thousand living, were:

1913	24.4	1921	22.5
1914	24.4	1922	20.3
1915	20.9	1923	19.6
1916	21.0	1924	19.1
1917	17.2	1925	18.6
1918	17.8	1926	17.8
1919	18.6	1927	16.7
1920	24.2		

The annual rates for the years 1913-1926 are as follows:

1913	24.1	1921	22.4
1914	23.8	1922	20.4
1915	21.9	1923	19.7
1916	20.9	1924	18.2
1917	17.8	1925	18.3
1918	17.7	1926	17.8
1919	18.5	1927 (first three quarters)	17.2
1920	25.5		

If, then, the last quarter of the present year should fall below that of last year, the annual birth rate will have dropped in peace time below the war time figures. The birth rate today is half what it was forty years ago. The live births registered in the third quarter numbered 164,009, and were 7,071 fewer than in the preceding quarter and 10,828 fewer than in the third quarter of 1926. The death rate for the third quarter was 9.4 per thousand. This is slightly higher than the rate of 1926, third quarter. Infant mortality (death rate per thousand births) was 50 per thousand. This rate was 17 per thousand below the average of the ten preceding third quarters and is the lowest rate recorded.

The Medical Aspects of Contraception

The question of birth control, or contraception, continues to receive much attention in both the lay and the medical press. A notable contribution on "Medical Aspects of Contraception" by the medical committee appointed by the National Council of Public Morals, in connection with the investigations of the National Birth Rate Commission, has just been published. The committee consisted of well known members of the medical profession with Mr. Charles Gibbs, senior surgeon to Charing Cross Hospital and the Lock Hospital as chairman, and Sir Arthur Newsholme, formerly principal medical officer of the ministry of health as vice chairman. They find that the amount of scientific knowledge as to the efficiency of contraceptives is small and that exact information can be based only on the collection of data over a period of years. They consider that two sources of error vitiate much that has been written on the subject. 1. A considerable proportion of marriages are sterile apart from disease or the use of contraceptives. 2. In normal married life the average intervals of child-bearing are much longer than is commonly supposed. Among the young the interval is two years and after 30 this interval increases. This has been the experience of large communities before modern birth control was known. Subject to these considerations the committee has arrived at the following conclusions: 1. Contraception is being attempted by a large number of persons. 2. This number is probably increasing rapidly. 3. The reduction of the birth rate is partially, and perhaps chiefly, due to the increasing use of contraceptive methods. 4. Judging from experiments on animals, diet may have an influence on fecundity in human beings. 5. It is generally stated that contraceptives are producing a diminution in the offspring of those best able to bring up a family satisfactorily, but are not used to the same extent by those unable to support their families or those who, owing to alcoholism, mental defect or other inherited disease are not likely to beget good citizens. On the social aspect of the question the committee considers the undiscriminating publicity now given by some to birth control an evil, especially in the case of young unmarried persons. They find that the entirely successful contraceptive—one that would be sure, harmless and simple—has not yet been discovered. Under present conditions birth clinics can be started and carried on by irresponsible persons or by those whose only purpose is the sale of some particular apparatus. Such clinics should be under the control of experienced physicians, and hospitals should be centers of advice and instruction on the subject. Medical cannot be wholly divorced from social and moral considerations, and no impediment should be placed in the way of married couples who desire information as to contraception because of medical reasons, excessive child bearing or poverty. In this matter the welfare, especially of the children, should determine the practice. National welfare must also be considered. There are limits beyond which a falling birth rate is a disaster to a country. When restriction of children is based on selfish considerations rather than on grounds of health and prudence, it is injurious both to the character and to the welfare of the community. One of the causes of contraception is the crowded life of the city, which enormously increases the difficulty and expense of rearing children. Among personal reports appended, one by Mr. C. J. Bond, F.R.C.S., is of interest. He holds that adequate knowledge of the factors that affect fecundity and of the best means of controlling conception are steps in the evolutionary process whereby mankind will be able more and more to influence human destiny and increase the racial stock of innate capacity.

At the Cambridge Union, birth control was debated at crowded meetings from which women students were excluded, as it was felt that the speakers would be more at their ease in their absence. The motion was "that a wider knowledge of contraceptive methods would be in the interests both of morality and of social welfare." The proposer, Mr. G. Crowther, said that a steady lowering of the average health and character of the peoples of these islands could be checked only by enabling the poorer people to limit their families. Mr. G. Harding, who opposed, contended that a country with a steadily rising population was more likely to be vigorous and powerful than one governed by birth control. Dr. Crichton Miller, the writer on psychotherapy, supported the motion. He said that monogamy is not going to fall by the knowledge of contraceptives, but is far more likely to stand because of it. The Bishop of Hereford, who opposed, said that they wanted to encourage the good stock—included in which were the artisans—and to maintain their numbers. The voting was: for the motion, 512; against, 315.

Medical Work of Pensions Ministry

Speaking before the Brighton and Sussex Medico-Chirurgical Society, Major Tryon, minister of pensions, referred to the importance of the services which the medical profession had rendered to his department in the treatment of those injured in the war. The ministry found that its needs were far beyond the existing accommodation and facilities of civil and military hospitals. Many of the cases, moreover, were of a special nature, for example, tropical diseases, paraplegic and facial injuries and shell shock, for which no adequate appropriate treatment facilities existed. The ministry had

established hospitals of its own, at the same time making full use of existing facilities. March 31, 1921, 26,342 pensioners were receiving institutional treatment, and 122,476 noninstitutional treatment, a total of 148,818, and there were 113 special institutions for the treatment of war disabilities established by the ministry. These figures did not include cases of insanity (about 6,000) or officers and nurses. Gradually, as the number of cases requiring treatment diminished, it became possible to concentrate patients in a few specially equipped institutions, for example, patients with dysentery and other tropical diseases, paraplegia and epilepsy. The miscellaneous category of war neurosis resolved itself as time went on into the definitely insane, the borderline case, the true neurasthenic, and the mentally defective. For all these classes, special arrangements were made. Remarkable success had been attained in the treatment of penetrating wounds of the skull and brain and gunshot wounds of the chest. The primary surgical work of the ministry had now been largely completed, but certain kinds of wounds sustained in the war had shown an unfortunate liability to flare up into unexpected activity, and there was still need for much surgical work. In the provision of limbs and appliances, the ministry had led the world. Through constant improvement and research, the limbs now supplied by the ministry approached nearly to perfection. There yet remained much to do, for the medical problems resulting from the war were not yet solved. At present 3,750 beds were still required in ministry hospitals to meet the special needs of pensioners, and still they provided treatment for 5,250 outpatients. The insane, the paraplegic, the tuberculous, the borderline, and the mentally defective case still needed special care and treatment. The wounds were not all healed.

GENEVA

(From Our Regular Correspondent)

Nov. 15, 1927.

International Office of Public Hygiene

Most of the work of the permanent committee of the International Office of Public Hygiene has been devoted to the following questions: Article 28 of the convention held in 1926 provides that the International Office of Public Hygiene shall draw up a document to be used as a certificate of deratization or exemption from deratization. The draft of this document has been completed and will be forwarded to the governments interested.

The committee has given its opinion, requested by the International Hydrographic Bureau, respecting signals for use by maritime sanitary services. The question of employing wireless telegraphy for use by these services will be decided at the next session, in 1928.

The international sanitary conference held in Paris last year requested the office to study the question of surgeons attached to the mercantile service, concerning their qualifications and facilities to be accorded to ships having a duly qualified surgeon on board. Communications received from thirteen different countries (including the United States) show that opinions and practices are still quite divergent but that there generally exists an equal desire to adopt measures to have ship surgeons specially trained for their particular work and to give them a moral and material situation in relation to the qualities exacted of them. These physicians might become useful auxiliaries to the sanitary authorities of all countries. The study of this question is to be continued.

Among the communications received may be mentioned one relating to the regulation of therapeutic products. In Italy, the law of Nov. 25, 1926, has ordered control of biologic products (serums and vaccines) before they can be put on the market. As long as they are in the experimental stage these products cannot be employed in man excepting in certain establishments under public control and authorized by the prefect. The person conducting the experiments must first of all make a statement to the director of the administration in the jurdisdiction in which the institution is located. The preparation of autovaccines is allowed only in hospitals, institutes and public laboratories authorized by the minister of the interior.

In England, the law of Aug. 7, 1925, has now been arranged to include questions of administration and those of technic—standard of quality and purity. This includes not only serums and bacterial vaccines but also smallpox lymph, insulin and preparations of the pituitary gland.

In Holland, a royal decree has been given for the recent law concerning serums, vaccines and biologic products, but does not include autovaccines. In Switzerland a law is in preparation.

Rodents and their cutaneous parasites intervening in the distribution of plague has given rise to many communications, as well as to a general report summarizing the documents thus far collected. This report draws attention to the part played by plague which occurs in the deserts in the general epidemiology of this disease. There exist four well known foci, and one each in Africa, Europe, Asia and America, and in each focus the disease is due to a different species of rodent. All of them are in a wild state and become infected from wharf-rats by the intermediary of other species which, themselves, also favor the spread of human plague.

A program for the study of rat fleas is being realized in the United States. In South Africa it has been observed that fleas kept from their host remain living and infecting in their subterranean nest for not less than sixty days. In British India research work is being done concerning the epidemiology of plague and on antiplague vaccination. It has now been proved that if *P. cheopis* is the principal agent of propagation of plague, *P. astia* may likewise intervene and has shown itself quite apt to transfer the infection experimentally. Outside their host, the duration of life of *P. cheopis* and *P. astia* is being studied. It has already been noted that the females of both species live longer than males and that the females of *P. astia* have a shorter life than those of *P. cheopis*. Researches have been effected in British India regarding the epidemiology of cholera and are to be discussed in the next session.

Yellow fever has occurred in French West Africa toward the end of winter in several attacks, usually without any connection with a recrudescence of the disease on the Gold Coast and Nigeria.

Public Lectures

The following important list of gratuitous public lectures has been offered by the School of Pharmacy of the University of Geneva during the winter semester 1927-1928. Prof. L. Duparc: mineral waters, their origin, composition and radioactivity; Prof. E. Cherbuliez, colloidal metals and their use in pharmacy; Prof. E. Guyenot, animal venoms; Prof. M. Roch, hypersensibility to drugs and idiosyncrasy; Prof. H. Christiani, injuries caused by industrial vapors; Prof. A. Lendner, stimulants: their use and abuse; Prof. R. Chodat, cardiotonic plants and filtrable viruses.

Infantile Paralysis

The Swiss federal department of the interior has just issued a circular to the cantonal sanitary authorities concerning acute anterior poliomyelitis, because for several weeks past there has been a recrudescence of this infectious disease in certain European countries, especially Roumania, where the disease has assumed the aspect of a real epidemic, as well as in certain parts of Germany. The number of cases of infantile paralysis reported in Switzerland since the first

of 1927 has so far not been greater than the two previous years, being forty-three in all (forty-two in 1926, forty-five in 1925). The present situation is not disquieting; but, in view of the news received from foreign countries and the fact that recently there have been recrudescences of the disease (257 cases reported in 1923 and 108 in 1924), it has been thought prudent to call the attention of the profession to the fact.

ITALY

(From Our Regular Correspondent)

Nov. 15, 1927.

Congress of Pediatrics

Under the chairmanship of Prof. Rocco Jemma, director of the Pediatric Clinic in Naples, the twelfth National Congress of Pediatrics was recently held in that city. The opening session was held in the Great Hall of the university in the presence of the Duchess D'Aosta, addresses being delivered by the rector, Professor Bottazzi, and by Professor Jemma, in which the progress made in Italy in recent years was emphasized; more particularly, in the solution of the problems of childhood through the creation of a national society for its protection, and by means of legislation along the line of welfare work. Many pediatric clinics have been improved and modernized, and construction work on a fine new clinic in Naples has already been begun.

KIDNEY DISEASE IN CHILDREN

Prof. A. Canelli of Turin discussed the first part of the subject of kidney disease in children. Following the classification of Volhard and Fahr, he divided the nephropathies occurring in children into three types: nephrosis, or the degenerative type; nephritis, or the inflammatory type, and sclerosis, or the arteriosclerotic type. The nephroses are of tubular origin, and are caused by endogenous and exogenous toxic substances. They may be divided into true and necrosing types. Among the various types that may be assumed, albuminous degeneration is most frequent in the febrile states. Nephritis may be either diffuse or focal. In the former there is always high blood pressure. The cause is almost always a bacterial infection, but sometimes it is a chemical substance or a "cold." In childhood, the tonsils are one of the principal portals of entry of the disease. Sclerosis may be simple sclerosis of the renal vessels or it may be associated with nephritis; all produce renal insufficiency. In childhood they are rare types. They are chiefly of hereditary or syphilitic origin. The speaker described then the pathologic observations (macroscopic and microscopic) of the various forms of kidney disease in children, emphasizing that in nephrosis the tubules are chiefly affected, and in nephritis the glomeruli and the interstitial tissue. Professor Maggiore spoke of the various clinical types of nephrosis and nephritis. The acute forms of nephrosis represent the milder stage; they are transient and terminate with the end of the febrile process. The chronic forms present three stages: a hydrophic form, one without edema, and a terminal form. The complex nephroses include the types resulting from mercuric chloride and those with amyloid kidney. There are also mixed types. Nephritis may be distinguished as: acute genuine diffuse glomerulonephritis (of varying gravity; sometimes associated with azotemia); subacute and chronic glomerulonephritis (with low content of albumin in the urine but with increase of vascular pressure); focal glomerulonephritis (with or without hematuria; to these types belongs the pedonephritis of Heubner); acute interstitial nephritis, and embolic nephritis. The speaker explained also certain functional anomalies of the kidneys (nephro-arrhythmia; constitutional and physiologic albuminuria), and spoke at length on the diagnosis, prognosis and treatment of kidney disease in children.

CONGENITAL SYPHILIS

Prof. E. Menzi of Turin presented the official communication on congenital syphilis. The speaker, basing his statements on his personal observations in 208 cases encountered in 9,000 subjects examined, said that the criteria on which one could rely in the diagnosis of congenital syphilis could be reduced essentially to four: a syphilitic family, a syphilitic terrain, etiologic diagnosis, and therapeutic proof.

The familial inquiry should consider chiefly the mother—her personal history, the clinical manifestations, and the serologic diagnosis. As for the syphilitic terrain, the speaker cited data from his personal statistics from which it appeared that the frequency of the infection is 11 per cent in hospitalized children and from 2 to 3 per cent in illegitimate progeny. The clinical symptomatology may vary from the absence of symptoms to the most pronounced types. The manifestations of the disease may be divided into three categories (Marfan and Hutinel) according to the age of the child: (1) from birth to age 4 months; (2) from ages 4 months to 3 years; (3) from age 3 to puberty. According to the statistics of the speaker, the frequency of the symptoms is as follows: splenomegaly in 43 per cent of the cases; rhinitis, 20 per cent; mucosal lesions, rhagades, 29 per cent; condylomas, 12 per cent; syphiloderm, 40 per cent; syphilitic pseudoparalysis, 20 per cent; pemphigus, 9 per cent; tumefaction of the testis, simple or associated with hydrocele, 4 per cent. The etiologic diagnosis is a subject of the greatest importance, and is based on observations, such as the search for the spirochete and the tests (Wassermann and Meinicke, especially) on the blood, the spinal fluid, and the exudates. The therapeutic test is indicated, above all, in those children who, while they are congenital syphilitics, do not present any definite manifestations of syphilis. The therapeutic remedies are the same as those employed in acquired syphilis: arsphenamines, mercury and bismuth. Sometimes the arsphenamines were combined by the author with organotherapy, based especially on the thyroid, the hypophysis and the suprarenals. In the opinion of the speaker, the state or central government should take part in the crusade against congenital syphilis.

Among the more important general communications on the second main topic was that of Professor Auricchio of Naples, who, in 10,499 children treated during a period of three years in the Clinica Pediatrica in Naples, found 1,299 affected with congenital syphilis (12.3 per cent), and another paper by Dr. Emmanuele, who, on the basis of his statistics on more than 6,000 families, stated that he had encountered in 31,683 pregnancies 366 premature births, 224 twin births, and 3,706 miscarriages. In the last mentioned, syphilis was present in 80 per cent of the cases; syphilis was noted also in 50 per cent of the premature births, and in 20 per cent of the twin births.

Several further papers were presented, among which was one by Professor Valagussa of Rome, which recounted the activities of the national society for the protection of motherhood and childhood, during the year immediately following the promulgation of the law that established it. One session of the congress was devoted to communications on ultraviolet rays, six papers having been presented by Professor Spolverini of Pavia and his school, and four by other members. Professor Auricchio made reference to the intradermal test of Dick, and stated that, on the basis of his observations on 666 children, he was unable to recognize its value as a specific index of susceptibility to scarlet fever. Professor Nasso of Perugia spoke on the subject of transplacental transmission of tuberculosis, and admitted, on the basis of his personal experiments, that there was a bare possibility that such transmission might occur, and that it might be explained by the assumption of an ultravirus.

Perugia was chosen as the meeting place for the next congress.

The Association of the Italian Medical Press

The representatives of the Italian medical press, consisting of managers, editors and publishers of twenty-three national medical journals, met recently at the University of Parma. The president, Professor Ascoli, after having given a résumé of the present status of the three sections (northern, central, and southern Italy) that were to make up the new association, brought up for discussion the following subjects: to what extent the association will function as a syndicate; the choosing of a title for the association; relations to the publishers; as to how the sections are to be maintained. Profs. Donati, Castellino and Ferramini expressed their views on these points. It was decided that the association should be called "l'Associazione della Stampa Medica Scientifica Italiana"; it will not be enrolled in the syndicate of the journalists; the publishers will be included; the three sections will be maintained, and their organization will be entrusted, respectively, to Professors Ferramini, Ascoli and Donati. In accordance with the unanimous vote of those present, the president declared the association duly established.

Conclusion of the First Course of the School of Malariology

The first course of the Scuola superiore di malariologia, established in Rome during the current year, has just been brought to a close in Venice, after a study tour that extended over almost a month. The director, Prof. V. Ascoli, gave an outline of the course of instruction, which was based, not only on the scientific study of the biology of the protozoan and of the various clinical forms of the disease, but also on the study of the primary causes to be found in the character of the terrain and in the hydrometeorological conditions; on the observation of various types of prophylaxis adapted to a given region; on the study of hydraulic sanitation combined with agrarian improvements, on which a better sanitary condition depends. The sanitary condition was considered not only from the technical side but also from the medicolegal and the economic point of view. Eighty-eight students, eighteen of whom were foreigners, took part in the course.

VIENNA

(From Our Regular Correspondent)

Nov. 20, 1927.

Restrictions on the Admission of Foreign Students

The senate of the medical faculty of the University of Vienna has adopted a measure with a view to overcoming the difficulties that arise in the study of anatomy. Henceforth, foreign students of medicine who have not studied in Vienna at least two years will not be allowed to matriculate until all Austrian students have secured their places in the anatomic institutes. It should be emphasized that this restriction does not apply to doctors of medicine and thus does not affect the postgraduate courses, but concerns only undergraduate students. The reason for this unusual measure is the scarcity of cadavers for instruction in anatomy. At present, the supply of cadavers on hand at the two anatomic institutes amounts only to fifty-eight, while there are about 350 first-year, 300 second-year and 260 third-year students who are supposed to have practice work in dissection. For examinations alone, about twenty cadavers are needed. Doubtless, some additional material (children, suicides) will be received during the course of the winter. But as the medical school of the University of Vienna is sought out by students from all of eastern Europe and the Balkan countries, often to the extent that they constitute 60 per cent of the beginning classes, it has been forced on the attention of the authorities, during the past two years, that their own nationals were suffering greatly on that account, so that, frequently, complaints have been heard in parliament that the increasing number of medical students was not being afforded adequate facilities for instruction. This year, with the opening of the winter semester, Austrian students were matriculated first, and then applications from students from Poland, Hungary, Bulgaria and Jugoslavia were given consideration. The result was that about 200 first-year students were refused admission, and were obliged to seek entrance at the universities of Italy, Switzerland and Germany. The decision of the senate has not been universally approved in academic circles, and it has been emphasized, not without justification, that the final result will be that Vienna will lose its reputation as the scientific center for southern and eastern Europe.

The New Roentgenologic Institute at the Veterinary School

At the Vienna Veterinär-Hochschule, a new roentgenologic institute was recently opened that not only constitutes one of the "sights" of Vienna's medical center but is also an outstanding achievement of modern technic. With the aid of the Rockefeller Foundation, which supplied two thirds of the funds required (the remainder having been contributed by the administration of public instruction and a number of private corporations, such as stock raisers, sport associations and agricultural interests), the largest roentgen-ray apparatus to be found in Europe has been installed by the Siemens Gesellschaft. The new apparatus makes possible the transillumination of the bones and muscles of the largest domestic animals, many of which could not formerly be roentgenized. All roentgenologic apparatus is mounted on wheels, so that it can be conveniently brought up within range of the roped "patients." The personnel operating the apparatus is protected by an enclosed cell from the effects of the rays. The institute, which will now apply to veterinary medicine the methods that have been developed for the treatment of man, will be open to the veterinarians of the whole country for purposes of instruction and treatment. It is thought that especially the countries of Europe that are devoted, in great part, to agriculture and animal husbandry will be much interested in the facilities of the new institute. Prof. Dr. Wirth and Dr. Pommer are at the head of the institute.

Functional Nervous Disturbances of the Internal Organs with Involvement of the Body Covering

At the recent convention of neurologists and internists from the Alpine countries, Professor Hartmann of Graz discussed the little known but yet important manifestations of neurofunctional disturbances of the internal organs, the etiology of which has hitherto not been satisfactorily explained. In the majority of the cases a disordered condition of the body covering can be shown to exist, which gives rise to widely different aspects of functional derangement of the internal organs, varying with the intensity and extent of the involvement of the integument. These manifestations take the form of (1) local or diffuse pains, resembling rheumatic pains, or analogous to the type of pain occurring in well known disorders of the internal organs; (2) general symptoms in the motor and sensory spheres, such as tiring easily, disturbances of accommodation, hyperesthesia, paresthesia and hypesthesia, and (3) psychic disturbances originating in a primary psychic insult. These three groups may occur also in various complete or partial combinations in the individual case. Such patients present usually lessened movability, lessened or practically abolished pliancy, and reduced elasticity (amounting sometimes to a tendinous induration) of the body covering. The genesis of these conditions is explained by changes occurring in the status of the tissue colloids, a modification referred to by Schade as "gelose." If the colloidal modification develops further, ceasing to be merely a molecular change and becomes a change in the

microscopic structure, more distinct and more marked changes, histologically demonstrable, will be noted. As a result of the intimate relations between the central and the vegetative nervous system, on the one hand, and the body covering (integument), impairment of the functioning of the internal organs occurs, owing to the influence on the osmotic and the ionic relationships. Etiologically, in addition to a constitutional tendency, attention will be directed toward long-drawn-out infections and suppurations (chronic tonsillitis), and as the precipitating factor chilling of the body may be especially considered; but there are other influences at work that reduce the capacity of the body to compensate, to mention, more particularly, psychic traumas.

Progress in Roentgen-Ray Treatment of Cancer

In one of the recent postgraduate courses of the University of Vienna, which are open to all physicians, Prof. Dr. Holzknecht and Prof. Dr. Schlesinger discussed the present status of radiotherapy in dealing with neoplasms. They emphasized that, in addition to the well known factors such as localization of the tumor, age of the patient, and the delimitation and extent of the tumor, several new factors had been found to be equally important; namely, the structure of the soil in which the tumor is developing, the age of the several tumors, and the physical condition of the patient. Inflammatory changes in the vicinity of the tumor are to be taken as an unfavorable factor. If the tissues adjacent to the tumor have been injured by previous roentgenization, renewed irradiation will have a bad effect. In cancers that are just developing, particularly in very recent disease of the lymph nodes, also in tumors of very long standing, and likewise in old swellings of the lymph nodes, it is difficult to bring about any retrogression, and it is often next to impossible. Only nodes which are of medium standing (not too recent and not too old) can be readily influenced by roentgen rays. Also softening of neoplasms offers a poor prognosis. It is of interest to note the previously unknown fact that a good condition of the body forces in cancer patients is often associated with an unfavorable reaction of cancer to roentgen rays. In somewhat cachectic persons the retrogression of neoplasms can be brought about much more easily. Varying with their localization, tumors react differently to roentgen rays, though it is not significant whether they are deepseated or lie near the surface. Cancers of the tongue, the cheeks, the esophagus and the stomach do not yield readily to roentgen rays, but in tumors of the pharynx, the thyroid gland, the mammae, the uterus and the skin, very good results are obtained, which are as good as those secured by surgical methods. The effect of roentgen-ray treatment is much enhanced if, from fifteen to twenty minutes before the irradiation, 10 cc. of a 10 per cent dextrose solution is injected intravenously. Such preliminary treatment tends to prevent also the untoward general reaction known as "roentgen nausea." By the administration of fractioned doses more can be accomplished than by a single massive roentgen-ray dose, and, especially, the lessening or prevention of pain is thereby achieved.

Graduates in Medicine

In the summer semester of 1927, there were 189 graduations in medicine at the University of Vienna (107 nationals and eighty-two, or 40 per cent, foreigners). At the University of Graz, during the same period, there were fifty-five graduations (thirty-seven, or 70 per cent, foreigners). At Innsbruck there were forty-three graduations (thirty-three, or 75 per cent, foreigners). Most of the foreigners were Bulgarians (seventy-four students), but there were also Egyptians, Hindus and Russians. It is evident, therefore, that Vienna still plays an important part as an educational center for foreign students.

Marriages

EMMETT ANDERSON HEIBERG, Fergus Falls, Minn., to Miss Josephine Anderson of Northfield, in November.

ROBERT C. AUSTIN to Mrs. Louise Allaman Kirkpatrick, both of Dayton, Ohio, November 15.

W. G. GUNN, Vancouver, B. C., Canada, to Miss Irma Lola Paterson of Ladner, November 16.

RAYMOND W. HAUSLER to Miss Jean Wheeler Speier, both of Portland, Ore., recently.

PAUL W. SHARP to Miss Betty Mueller, both of Klamath Falls, Ore., recently.

Deaths

Byron Edward Biggs, Ann Arbor, Mich.; Dearborn Medical College, Chicago, 1907; Hahnemann Medical College and Hospital, Chicago, 1908; member of the American Psychiatric Association; formerly superintendent of the Indiana School for Feeble-Minded Youth, Fort Wayne, Ind., the Mississippi School and Colony for Feebleminded, Ellisville, and the Hurley Hospital, Flint; on the staff of the University Hospital, where he died, December 5, aged 46, of coronary sclerosis and myocarditis.

Michael Christopher O'Brien ✠ New York; Bellevue Hospital Medical College, New York, 1881; at one time adjunct professor of medicine, Fordham University School of Medicine, New York; formerly on the staffs of the Misericordia and St. Elizabeth's hospitals, New York, and St. Mary's Hospital, Waterbury, Conn.; aged 68; died, December 7, of heart disease.

William Henry Bash, Castlegate, Utah; College of Physicians and Surgeons, Baltimore, 1915; member of the Utah State Medical Association; president and formerly secretary of the Carbon County Medical Society; served during the World War; aged 38; died, November 28, of pneumonia, following an operation several weeks ago on the gallbladder.

Frederick Emerson Allen ✠ North Little Rock, Ark.; College of Physicians and Surgeons of San Francisco, 1901; member of the American Psychiatric Association; on the staff of the U. S. Veterans' Hospital, number 78, where he died, November 23, aged 59, of myocarditis with acute dilatation of the heart.

Anton Shimonek ✠ St. Paul; Rush Medical College, Chicago, 1879; formerly clinical professor of surgery, University of Minnesota Medical School, Minneapolis; at one time on the staffs of St. Joseph's and the City and County hospitals; aged 72; died, November 23, of anasarca and arteriosclerosis.

Joseph Clemens Elfers ✠ Sheboygan, Wis.; Medical College of Ohio, Cincinnati, 1890; past president of the Sheboygan County Medical Society; health officer of Sheboygan; aged 68; died, October 31, at the Deaconess Hospital, Milwaukee, of mercuric chloride poisoning.

Charles Emmett Durham, Austin, Texas; University of Texas School of Medicine, Galveston, 1899; member of the State Medical Association of Texas; director of vital statistics and state registrar; served during the World War; aged 58; died, November 30, of heart disease.

David C. Wylie, Peacock, Texas; Medical Department of the Tulane University of Louisiana, New Orleans, 1898; formerly president of the school board of Throckmorton, Aspermont and Peacock; served during the World War; aged 55; died, July 21, of myelogenous leukemia.

John Diederich Seba, Bland, Mo.; Beaumont Hospital Medical College, St. Louis, 1892; member of the Missouri State Medical Association; for many years secretary of the Gasconade County Medical Society; formerly county health officer; aged 71; died, November 1.

John Nywening, Yakima, Wash.; St. Louis University School of Medicine, 1904; member of the Washington State Medical Association; formerly city and county health officer; aged 52; died, November 14, at St. Elizabeth's Hospital, of cerebral hemorrhage.

Wallace Alvin Briggs ✠ Sacramento, Calif.; University of Michigan Medical School, Ann Arbor, 1871; for several years secretary of the California Medical Association; member of the California State Board of Health, 1900-1914; aged 79; died, November 26.

Schuyler Simpson Tuttle, Van Wert, Ohio; Rush Medical College, Chicago, 1893; member of the Ohio State Medical Association; formerly on the staff of the Van Wert County Hospital; aged 58; died suddenly, November 26, of heart disease.

Edgar Owens Henshall, Osborne, Kan.; Rush Medical College, Chicago, 1885; formerly mayor of Osborne; at one time county coroner, member of the city council and board of education; aged 69; died, November 4, of carcinoma of the rectum.

John Francis Haben ✠ McKeesport, Pa.; Bellevue Hospital Medical College, New York, 1892; for many years on the staff of the McKeesport Hospital; aged 63; died, November 26, at the Mercy Hospital, Pittsburgh, of heart disease.

Solomon Weingrad ✠ Mountain Dale, N. Y.; New York Homeopathic Medical College and Hospital, 1913; formerly health officer of the town of Fallsburgh and the village of Woodridge; aged 44; died, November 16, of pneumonia.

Harvey Wickes Felter, Cincinnati; Eclectic Medical Institute, Cincinnati, 1888; professor emeritus of materia medica at his alma mater; editor of the *Eclectic Medical Journal;* aged 62; died, October 26, of diabetes mellitus.

Turner Lawrence Johnson, Green Brier, Tenn. (licensed, Tennessee, 1889); member of the Tennessee State Medical Association; Confederate Veteran; aged 83; was found dead in bed, November 12, of heart disease.

James Anthony Sisk, Knoxville, Tenn.; Southern Medical College, Atlanta, Ga., 1881; aged 75; died, November 16, at the Howard-Henderson Hospital, of pneumonia, following a fracture of the hip received in a fall.

Forrest F. Fadeley, Albuquerque, N. M.; George Washington University Medical School, Washington, D. C., 1904; member of the American Urological Association; aged 52; died, September 30, at Hampton, Va.

Francis Louis Becka, Cleveland; Western Reserve University School of Medicine, Cleveland, 1920; member of the Ohio State Medical Association; aged 32; died, July 27, at St. John's Hospital, of tuberculosis.

George Dennis Hamlin ✠ Brooklyn; Medical Department of the University of the City of New York, 1883; formerly member of the board of education; aged 69; died suddenly, December 3, of acute pancreatitis.

Robert Stuart Primrose, New Bern, N. C.; Bellevue Hospital Medical College, New York, 1889; member of the Medical Society of the State of North Carolina; aged 61; died, December 3, of diabetes mellitus.

Martin Luther Gray ✠ Edgewood, Iowa; State University of Iowa College of Medicine, Iowa City, 1906; for many years member of the school board; aged 49; died, November 20, of coronary thrombosis.

Charles Oliver Sumner, Norwood, N. Y.; New York Homeopathic Medical College and Hospital, 1894; member of the Medical Society of the State of New York; aged 63; died, November 11, at Syracuse.

William James Price, Gainesville, Texas; University of Tennessee College of Medicine, Memphis, 1889; member of the State Medical Association of Texas; aged 66; died, October 2, of heart disease.

William P. Gardner, Washington, Iowa; State University of Iowa College of Medicine, Iowa City, 1886; for many years on the staff of the Washington County Hospital; aged 67; died, October 29, in Omaha.

Thomas Richard Hanley, Toronto, Ont., Canada; University of Toronto Faculty of Medicine, 1911; member of the Associated Anesthetists of the United States and Canada; aged 42; died, in November.

William Gibson Lowe, Lynn Haven, Fla.; Atlanta College of Physicians and Surgeons, 1910; member of the Florida Medical Association; aged 39; died, May 14, at Hendersonville, N. C., of tuberculosis.

Albert Hawk, Galt, Ont., Canada; Trinity Medical College, Toronto, 1883; L.R.C.P., Edinburgh, Scotland, 1883; for many years served in the city council and at one time mayor of Galt; died, in October.

John Dana Cutter ✠ Altadena, Calif.; Medical Department of the University of the City of New York, 1881; member of the State Medical Society of Wisconsin; aged 69; died in November, at Pasadena.

Matthew M. Pollard, Barnard, Mo.; Northwestern Medical College, St. Joseph, 1893; bank president; president of the local board of education; aged 58; died, November 16, of cerebral hemorrhage.

Felix R. Hill ✠ Alexandria, La.; Medical Department of the Tulane University of Louisiana, New Orleans, 1908; served during the World War; aged 45; died, October 28, of edema of the brain.

Robert L. Turner ✠ Meridian, Miss.; Medical Department of the Tulane University of Louisiana, New Orleans, 1891; physician in charge of a hospital bearing his name; aged 62; died, November 9.

Julian Ellis Kurtz, Reading, Pa.; Jefferson Medical College of Philadelphia, 1880; member of the Medical Society of the State of Pennsylvania; aged 71; died, November 12, of myocarditis.

Bonifant Ramsey Harmon, Springfield, Mo.; St. Louis College of Physicians and Surgeons, 1890; member of the Missouri State Medical Association; aged 60; died, November 5, at Carthage.

Mary Catherine Wright, Syracuse, N. Y.; University of Michigan Medical School, Ann Arbor, 1886; aged 76; died, November 16, at the Syracuse Memorial Hospital, of chronic myocarditis.

Israel M. Miller, Chelsea, Mass.; Tufts College Medical School, Boston, 1925; aged 27; died, July 14, at the Peter Bent Brigham Hospital, Boston, of epidemic cerebrospinal meningitis.

Thomas Jackson Conrey, Chesapeake City, Md.; Jefferson Medical College of Philadelphia, 1902; member of the Medical and Chirurgical Faculty of Maryland; aged 58; died, October 30.

John Patrick Kane ✠ Chicago; Chicago College of Medicine and Surgery, 1913; for twelve years on the staff of the Cook County Hospital; aged 44; died, December 9, of lobar pneumonia.

Ernest Bradford Schallenbach, Chelsea, Mass.; Harvard University Medical School, Boston, 1901; aged 49; died, November 27, at the Peter Bent Brigham Hospital, Boston, of pleurisy.

Abram Chase, Ithaca, N. Y.; University of Buffalo School of Medicine, 1882; member of the Medical Society of the State of New York; aged 76; died, November 10, of lobar pneumonia.

O. W. Nauman, Craig, Mo.; Northwestern University Medical School, Chicago, 1903; member of the Missouri State Medical Association; aged 50; died, December 12, of angina pectoris.

Charles M. Coggins, Covington, Ind.; Medical College of Ohio, Cincinnati, 1876; formerly member of the state legislature; aged 74; died, November 23, of arteriosclerosis and uremia.

James T. Scott, Williamstown, Ky.; Cincinnati College of Medicine and Surgery, 1869; formerly member of the state legislature; aged 82; died, November 13, of softening of the brain.

William Orville Harris, Rome, Miss.; University of Louisville (Ky.) School of Medicine, 1874; Confederate veteran; aged 82; died, November 21, of chronic interstitial nephritis.

Charles Scanlon Dryer, Lockland, Ohio; Indiana University School of Medicine, Indianapolis, 1913; served during the World War; aged 37; was shot and killed, November 26.

Frank D. Harris ✠ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1895; aged 55; died, November 26, at New Brunswick, N. J., of heart disease.

George Sherman Wilson, Nokomis, Ill.; Medical College of Indiana, Indianapolis, 1893; aged 62; died, November 24, at the Huber Memorial Hospital, Pana, of heart disease.

Bascom C. Rose ✠ Bryantsville, Ky.; Kentucky School of Medicine, Louisville, 1906; aged 45; died, December 4, of skull fracture, received when struck by an automobile.

Chester Arthur Glover, Bessemer, Ala.; Atlanta (Ga.) School of Medicine, 1910; member of the Medical Association of the State of Alabama; aged 44; died, November 21.

Carl Rudolf Williams, Bristow, Okla.; Illinois Medical College, Chicago, 1910; served during the World War; aged 43; died, November 11, of cerebral hemorrhage.

Harry E. Epperson, Browning, Mo.; Louisville (Ky.) Medical College, 1894; formerly a druggist; aged 76; died, October 20, of carcinoma of the prostate gland.

Charles W. Mackey ✠ Portland, Ind.; Medical College of Ohio, Cincinnati, 1881; health officer of Jay County; aged 69; died, November 26, of carcinoma of the liver.

Sylvester L. W. Knepper, Conklin, Mich.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1893; aged 81; died recently, of carcinoma of the stomach.

John Colwell Paine ⊕ Exeter, Calif.; Rush Medical College, Chicago, 1909; formerly on the staff of the Sequoia Sanitarium; aged 44; died, December 4, at the Kaweah Hospital, Vesalia, of bronchopneumonia.

James H. Ralston, Ellwood City, Pa.; Jefferson Medical College of Philadelphia, 1901; aged 63; died, November 28, of carcinoma of the sigmoid flexure of the colon.

Oscar L. Thweatt, Post, Texas; Gate City Medical College, Texarkana, 1906; aged 66; died, October 28, at the Lubbock (Texas) Sanitarium, of cerebral hemorrhage.

Edwin B. Ramsey, Houston, Texas; Meharry Medical College, Nashville, Tenn., 1880; aged 75; died, November 6, at a local hospital, of cerebral hemorrhage.

Ernest Sidney Bisbee ⊕ Boston; University of Pennsylvania School of Medicine, Philadelphia, 1905; aged 52; died, November 15, of cerebral hemorrhage.

Thomas A. D. Somers, New York; Fordham University School of Medicine, New York, 1916; aged 37; was found dead, November 25, of heart disease.

Scott Kennedy Wilson, Baltimore; University of Maryland School of Medicine, Baltimore, 1879; aged 68; died, November 21, following an operation.

Jesse Howard Milton, Baldwyn, Miss.; Memphis (Tenn.) Hospital Medical College, 1908; aged 45; died, suddenly, November 24, of heart disease.

Joseph Luther Jones, Jonesburg, Mo.; Missouri Medical College, St. Louis, 1880; formerly mayor of Jonesburg; aged 71; died, November 19.

William Wesley Hull, Fulton, Mo.; State University of Iowa College of Medicine, Iowa City, 1888; aged 68; died, November 14, of pneumonia.

Alice G. Huntington Anderson, Los Angeles; Hahnemann Medical College and Hospital, Chicago, 1886; died recently, of carcinoma of the breast.

Thomas N. H. Wylie, Pilot Point, Texas; Bellevue Hospital Medical College, New York, 1871; Confederate veteran; aged 83; died, October 23.

Clarence Prescott De Vore, Edgefield, S. C.; University of Georgia Medical Department, Augusta, 1874; aged 76; died, November 21, of uremia.

Carl Eugene Elfstrom ⊕ Brooklyn; Medico-Chirurgical Institute, Stockholm, Sweden, 1889; aged 64; died, November 30, of heart disease.

James Neil Nelson, Alliance, Ohio; University of Pittsburgh School of Medicine, 1897; aged 59; died, November 25, of cerebral hemorrhage.

Lawrence H. Pendergrast, Memphis, Tenn.; Memphis Hospital Medical College, 1902; aged 47; died, November 25, of cerebral hemorrhage.

Henry Beaman Burton, Syracuse, N. Y.; Albany Medical College, 1892; aged 58; died, November 17, of myocarditis and arteriosclerosis.

Francis B. Husted, Bridgeton, N. J.; Jefferson Medical College of Philadelphia, 1886; aged 70; died, November 10, of chronic nephritis.

Clarence F. Sweney, St. Paul; Rush Medical College, Chicago, 1881; aged 70; died, in November, of angina pectoris and myocarditis.

Edward Logan Perkins, Bedford, Ind.; Medical College of Indiana, Indianapolis, 1898; aged 50; died, November 6, at Tucson, Ariz.

William Perry Searcy, Exeter, Mo.; Barnes Medical College, St. Louis, 1896; aged 59; died, November 14, of cerebral hemorrhage.

Harry C. Fuller, Latrobe, Pa.; Jefferson Medical College of Philadelphia, 1885; aged 72; died, November 19, of carcinoma of the colon.

George W. Snyder, Mulliken, Mich. (licensed, Michigan, 1900); aged 83; died, July 20, at Portland, of chronic myocarditis.

Nicholas C. Parrish, Pottsboro, Texas (licensed, Texas, under the Act of 1907); aged 71; died, October 29, of heart disease.

Thomas J. Ashley, Orrick, Mo.; Kentucky School of Medicine, Louisville, 1892; aged 61; died recently, of heart disease.

Homer James Clark Birney, Ferndale, Wash.; Rush Medical College, Chicago, 1882; aged 72; died, in November.

Oceola C. Queen, Hannibal, Mo.; Meharry Medical College, Nashville, Tenn., 1891; aged 63; died, November 3.

William B. Scott, Bucklin, Mo.; Missouri Medical College, St. Louis, 1889; aged 62; died, November 3.

Correspondence

ANTHRACOSIS AND SILICOSIS IN PULMONARY TUBERCULOSIS

To the Editor:—In the editorial on anthracosis and silicosis in relation to pulmonary tuberculosis (THE JOURNAL, November 5), attention is called to the fact that the death rate shown for the group of miners and quarrymen was second to the lowest rate, but that it was believed on good grounds that, had the occupations been separated, that for the miners would have been lower. I believe this to be correct.

Again, the United States census is quoted as showing that the group "marble and stone cutters, in whom the dust inhaled also has a high silica content, comprised the occupational group with the highest mortality from tuberculosis."

The latter is even more misleading than the first. This group, I believe, should show the rate for marble and limestone workers separately. Marble and limestone have been shown to contain a minimum of silica and are relatively innocuous, and if grouped separately would show a very low death rate for silicosis or tuberculosis.

In this connection it is possible that the death rate for tuberculosis among marble workers would be somewhat misleading, from the fact that many learn the trade on granite and later seek work in marble, which is popularly considered by them to be much less harmful.

Such groupings of occupation as are here discussed are very misleading and I believe should be discontinued.

C. E. PERRY, M.D., Hartford, Conn.

PHYSICAL THERAPY ASSISTANCE

To the Editor:—An ethical physician does not regard his patient merely as a possible source of income. His interest is broad enough to include the humanities, as he sincerely desires to benefit the sufferers seeking his services. Every year men and women are turning to irresponsibles outside the profession for the help they ought to obtain within it. Lured by the attractive advertising campaigns of osteopaths and chiropractors, many leave their regular family physician and some fall into the hands of unscrupulous quacks. The layman is in no position to make an intelligent choice between the rival claimants.

Osteopaths and chiropractors are openly hostile to the medical profession. Not infrequently actual, and sometimes well nigh irreparable, harm is done to those needing the assistance of medicine or surgery by the antimedical propaganda of these schools. I am a graduate osteopath, and am also a graduate chiropractor. As such I know the weaknesses of both schools and because of this I have not chosen to operate either as an osteopath or as a chiropractor. I prefer the classification of "Physiotherapist." In this capacity I have labored in Chicago for more than thirty years. With this background of experience it is a matter of pride with me that I act with and under the direction of some of the ablest physicians in America. I am now and have been for more than twenty years associated with one of the leading hospitals in Chicago.

For more than thirty years it has been my contention that physical therapy is a legitimate branch of the medical profession. Physical therapy has, in common with the medical profession, its ethical practitioners and its quacks. It has, in common with the medical profession, its percentage of "hits and errors." It, like the medical profession, is a man-evolved rather than a divinely revealed and appointed system of healing. It is no more immune from fallacies than is any

other profession. If the physical therapist is an ethical practitioner, he will follow the instructions of the doctors who refer their patients to him, and, having discharged his function, he will send the patient back to his physician with his confidence in that physician's ability and discretion increased rather than diminished.

That physical therapy is a rapidly growing method of dealing with some of the maladies to which mankind is subject has been proved beyond question. One needs only to examine its history of the restoration of war cripples and the rebuilding and muscular reeducation of the victim of poliomyelitis to determine its probable future. The recent—and to the uninitiate, phenomenal—growth of physical therapy in this country, since the war, has been due entirely to the results obtained by its practitioners rather than to lurid advertising or any other nonethical spectacular means of attracting the attention and holding the limelight.

That physical therapy is an invaluable aid to the medical profession in the after-care of convalescent patients, especially when there is scar tissue or spasticity, no informed surgeon or physician will deny.

PETER J. PEEL, Chicago.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

DIAGNOSIS AND TREATMENT OF DISLOCATION OF SEMILUNAR CARTILAGES

To the Editor:—I am informed that in a case of semilunar cartilage dislocation or rupture in the knee joint, a roentgenogram will show this dislocation or malposition. It is further stated that it is not necessary to inject air into the knee cavity to demonstrate the lesion. It is further stated that if no injury has been sustained by either of the cartilages, the cartilages will not show in the roentgenogram, but there will be the usual roentgenographic appearance of a normal knee joint. Are these statements true? Please quote authorities in your reply. Please omit name and address.

M.D., Oklahoma.

ANSWER.—In cases of injury to or dislocation of the semilunar cartilages of the knee joint, roentgenograms do not often supply much, if any, positive information.

As Goetjes (Umschreibene Binnenverletzungen des Kniegelenks, *Ergebn. d. Chir. u. Orthop.* **8**:822, 1914) points out, the anatomic relations of the semilunar cartilages prevent a sharp definition on the plate. Furthermore, ligaments lie in relation to it which possess the same and similar density and so render the differentiation impossible. Martins (*Deutsche Ztschr. f. Chir.* **88,** 1907) reports a case in which he was able to determine on a roentgenogram a dislocated portion of a semilunar cartilage lying between the patella and the femur. Bruening (*Arch. f. klin. Chir.* **97,** 1912) speaks of the negative value of roentgenograms in the diagnosis of injuries to the semilunars. Ludloff (*Zentralbl. f. Chir.,* 1911) and Schlatter (*Beitr. z. klin. Chir.* **41**:229, 1903) express the same opinion, though Schlatter states that now and then a slight displacement of the patellar ligament may be made out in plates taken in the lateral position, which, however, can be interpreted only as a secondary result; i. e., due to fluid in the joint. Schwartz (*Beitr. z. klin. Chir.* **84,** 1913) reports a roentgenologic observation which he believes warrants the diagnosis of complete dislocation of the semilunar cartilage in its entire circumference, and this consists of a decrease in the joint space on the injured side, with slight subluxation of the tibia toward the uninjured side. Grashey (Lehmanns Medizinische Atlanten, ed. 2, **6**:28, 1924) mentions that an abnormally wide separation of the lateral joint space (it is always wider than the median) speaks for injury of the semilunar cartilage. Henderson (Collected Papers of the Mayo Clinic **10**:913, 1918) says: "The radiogram is an aid in the diagnosis only in so far as it is of negative value. Rarely does a semilunar cartilage cast a shadow on the plate, and then only if it is doubled up and greatly thickened, owing to the repeated traumas inflicted on it. Every knee presenting symptoms of mechanical derangement should be rayed, as this is the only way to differentiate in some cases between a loose osteocartilaginous body and a loose semilunar body. The loose osteocartilaginous body, due to osteochondritis dissecans, or osteochondromatosis, casts a definite shadow." Kappis (Chirurgische Diagnostik, 1924, p. 608) states that roentgenograms are negative. Taylor (Surgery of the Spine and Extremities, 1923, p. 358) states that the "x-ray is of no value as these fibrocartilaginous menisci cast no shadows."

Hoffa (*Berl. klin. Wchnschr.,* 1906, number 28) and Rauenbusch (*Fartschr. a. d. Geb. d. Röntgenstrahlen* **10,** 906-1907) were the first to attempt to show these cartilages by injection of oxygen into the knee joint, and they were successful. Air should never be injected, as there is danger of air embolism. The injection of oxygen, while recently reported on again by a few observers, has not been adopted by many surgeons because of its danger. Whitman (Orthopedic Surgery, ed. 8, 1927, p. 457) states that "in some instances the displaced cartilage may be demonstrated by the injection of oxygen, which shows in the roentgen-ray picture a black space between it and the tibia." Taylor says, "The procedure of injecting the joint with oxygen, thus throwing the fibrocartilages in relief, is too dangerous a procedure to warrant its use."

Any one interested in the subject of the diagnosis of injury to these cartilages should read the classic article by Robert Jones in the jubilee number of the *Annals of Surgery* (**50**:974 [Dec.] 1909). His report is based on more than 400 cases in which he operated, and he does not even mention the use of the roentgen ray.

The roentgen ray should be used to rule out other conditions, but is not essential in the making of an accurate diagnosis of injury to the semilunar cartilages or of their displacement.

TREATMENT OF GONORRHEA

To the Editor:—T. S., aged 45, first seen, October 17, had a moderately severe acute gonorrheal anterior urethritis of a few days' duration. The second urine was slightly cloudy, but the prostate and vesicles seemed normal. One week of intensive office treatment of the anterior urethra controlled the discharge, and the second urine became clear. During a second week of prescribed home treatment the discharge reappeared and the second urine became cloudy, the prostate becoming immense in size and hard, but the patient did not have fever or symptomatic posterior urethritis (no frequency or hematuria). The condition was promptly controlled by intensive diathermy and full doses of caprokol by mouth. During the third week sodium bromide, sodium salicylate and sodium nitrite were prescribed as an anaphrodisiac and to aid resolution of the prostatic inflammation. At the end of the third week mercurochrome was resumed in the form of small anterior injections after the patient had had one moderate intravenous injection of mercurochrome. The discharge disappeared completely. At the middle of the fourth week the prostate was only slightly enlarged and soft, except for the upper portion of one lateral lobe that was still indurated. At the end of the fourth week, when I had planned to start posterior instillation of mercurochrome, the patient suddenly developed simultaneously with a follicular tonsillitis and fever of 101.6 a mild arthritis of the left elbow, with pain extending along the flexor muscles and tendons of the forearm. Would this combination of conditions contraindicate deep urethral instillation with a soft catheter? Is the arthritis probably due to the genito-urinary infection, or is it probably due to the throat infection? The patient is constantly on full dosage of hexylresorcinol and is receiving prostatic diathermy for forty-five minutes daily and a moderate prostatic massage every other day. There were no gonococci to be found in prostatic smear. The patient has severe pyorrhea and one tooth carious to the roots. Kindly criticize treatment to date, suggest further treatment, answer questions, and discuss the case. Publish this if you find it worth while. I think the success of practice depends largely on finesse in management of such minor details as the problems presented. Please omit name.

M.D., Michigan.

ANSWER.—Cloudiness of the second portion of the urine indicates the presence of posterior urethritis. It is rather generally accepted that concomitant with posterior urethritis there is always an involvement of the prostate and seminal vesicles. The diagnosis of posterior urethritis forms an indication for local treatment simultaneously with the treatment of the anterior urethra. The administration of diathermy to the swollen prostate is conceded to be helpful. Daily treatments of this kind may produce undesirable irritation.

The effects of drugs as anaphrodisiacs are rather doubtful.

Intravenous injection of mercurochrome-220 soluble always carries with it the danger of serious disturbances within the renal parenchyma.

The history of the case suggests that the incidental tonsillitis led to a flaring up of a latent prostatic and vesicular infection. Both these conditions are apt to produce arthritis.

There is no contraindication to the use of posterior instillations by means of a Guyon capillary catheter.

Rectal massage should always be performed with a massage instrument to insure proper evacuation of the seminal vesicles.

Chronic prostatitis, vesiculitis and the arthritis call for local diathermy and, as general treatment, perhaps aseptic protein shock.

The latter may be administered in patients not suffering from any cardiac disturbance either by the intergluteal injection of cow's milk or by the intravenous injection of a few minims of a vaccine, to be repeated after the general reaction has subsided.

The dental infections should be attended to as a matter of course.

GONORRHEAL INFECTION OF THE CERVIX

To the Editor:—1. Can a mild case of gonorrhea be diagnosed by inspection of the cervix uteri alone, before taking a smear and in the absence of a vaginal discharge? 2. Can a case of cervical gonorrhea be said to be cured when the gonococci have disappeared from many successive smears, but a few pus cells persist in each smear? 3. After intensive treatment for four months of cervical gonorrhea, which has not extended beyond the cervix, and negative smears extending over a period of a year and a half, in the absence of other signs and symptoms of gonorrhea, is marriage a safe procedure for both parties concerned? Please do not publish name.

M.D., Virginia.

ANSWER.—1. Macroscopic examination is never sufficient for establishing the diagnosis of gonorrhea. Vaginal discharge may have subsided and still the gonorrheal infection of the cervix may prevail. A definite diagnosis can be made only by microscopic examination and in doubtful cases by culture tests. In securing the specimens, it is insufficient to gather secretion with a wire loop or a sound. The proper way of gaining the material for a specific examination is slight scraping of the cervical mucosa with a fine curet.

2. Cervical gonorrhea may be considered as cured only if repeated microscopic and culture tests, executed following provocative influences, furnish a negative result. Therefore these tests are performed either immediately before or immediately after the menstrual period or during the time of the reaction following the injection of a heterogenous protein.

3. The answer to the second question covers this inquiry.

EFFECTS OF DICTAPHONE ON HEARING

To the Editor:—Do you know of any scientific facts with regard to the effect of a dictaphone on the hearing of a girl who uses it continuously? Occasionally I have heard individuals express the belief that its use would ultimately injure the ear.

R. HAGMEYER, Chicago.

ANSWER.—The use of the dictaphone does not harm or in any way affect the ears of an operator. An apparatus of this type has been used for many years by a specialist in otology who has noticed no deleterious effect whatever. The use of the telephone is different. When a switchboard operator plugs into the board or throws a cam suddenly, a disagreeable and painful sensation is sometimes noticed in the ear. If this were frequently repeated, it might impair the hearing but there is no definite data obtainable on this subject. So far as the dictaphone is concerned, it is apparently perfectly safe to use for an indefinite period.

HONEY FOR DIABETES

To the Editor:—The following item appeared in the *American Fruit Grower:*

"The medical fraternity and hospitals throughout the United States are rapidly becoming used to prescribing honey in the diet of invalids and particularly those suffering from diabetes. Some conclusive evidence is being brought out to the effect that many invalids who cannot use sugar and similar sweets in their diets may use honey more or less freely without any of the serious effects which ordinarily develop from some other sweets. It is a well known fact that a great many people suffering from diabetes cannot use sugar at all, or only in very minute quantities. Quite a number of these same people have found that honey may be used, and cases have been reported showing that honey may be used quite freely without any ill effect. It is also known that bacteria which cause some of our common diseases, such as typhoid fever and dysentery, cannot live in honey for more than a few hours.

"We may therefore expect to find, when proper investigations have been made, that honey has strong medicinal qualities, and that it will be deemed as necessary in the diet of people as many of the products now used for the healthful development of the human body."

Will you kindly advise the latest accepted teaching as to the tolerance of honey by patients with diabetes?

THOMAS J. TUDOR, M.D., Norton, Va.

ANSWER.—Honey has its chief source in the nectars of flowers from which the bees abstract it, also in the juices of ripe fruits and the exudations of leaves (honey dew). While in the honey-sac of the bee, the sucrose (which is cane sugar) of the nectar becomes for the most part inverted, forming in the honey dextrose and levulose. The evaporation to a syrupy consistency is effected in the hive by exposure to a current of air produced by fanning the wings. According to Leach-Winton (Food Inspection and Analysis, New York, John Wiley & Sons), the flavor of honey varies considerably, according to its source. Besides water and the sugars named, honey contains a small amount of dextrin and protein, mineral matter and organic acids. Pollen is usually present, also as a rule a small amount of wax. Real honey may or may not contain formic acid. The most common adulterant is commercial invert-sugar.

Cane sugar, when ingested, is converted in the acid stomach to dextrose and levulose. It is apparent, therefore, that there is no essential difference whether carbohydrates are eaten in the form of honey or as an equivalent amount of sugar. As a food for invalids, honey has all the value of a pleasantly flavored sugar solution (or syrup) but it can have practically no other value.

The inference of bactericidal power of honey, as given in the foregoing item, is far fetched and unfair. It can be said with equal force in case of sucrose syrups. The preserving action of syrups containing sufficient sugar is common knowledge.

TREATMENT OF INCONTINENCE OF URINE

To the Editor:—What may be the possible causes of false incontinence? A man, aged 26, with negative history, has frequent micturition (every hour or two); it is urgent and painless, but characterized by tenesmus toward the end of the act. Methenamine and sodium benzoate have afforded little relief. What line of treatment would you suggest? Please omit name.

M.D., Quebec.

ANSWER.—The symptoms reported suggest some mechanical obstruction at the vesical outlet. Cystoscopy and supplementary cystography will determine the pathologic conditions prevailing. Based on these observations, a rational mode of treatment may be instituted.

PERIOD OF CONCEPTION

To the Editor:—Please state the period during which conception is least likely to occur in the human being. Kindly omit my name.

M.D., Albany, N. Y.

ANSWER.—In the human being, conception may occur at any time in the menstrual cycle except perhaps the first day of the menstrual flow; but it is least likely to occur just before menstruation begins. Conception is most likely to take place when coitus is practiced just before ovulation, and in women, according to different authorities, ovulation occurs from the ninth to the nineteenth day of the menstrual cycle. Most of the evidence points to the occurrence of ovulation in the first half of the menstrual cycle; hence conception is most likely to occur soon after the menstrual flow. The optimal time is the eighth day after the beginning of menstruation.

USE OF ASPIDIUM

To the Editor:—Could you please give me a safe method of pleasantly as possible administering oleoresin of aspidium to children who cannot be induced to take the drug in capsules and who vomit the plain emulsion with acacia? Various suggested and current methods involve the use of chloroform, syrups containing a little alcohol (e. g., syrup of ginger), and seem likely to increase absorption. Please omit name.

M.D., Galveston, Texas.

ANSWER.—Oleoresin of aspidium has so disagreeable a taste that it seems impossible to find some method of making it pleasant or even inoffensive excepting by encapsulation. Pelletierine tannate is much more easily disguised. It may be, for instance, suspended in syrup.

INTERPRETATION OF WASSERMANN TEST

To the Editor:—A Wassermann test was done on a patient as part of a general examination and it was found that the usual test was negative, but the icebox test was positive. The patient is receiving antisyphilitic treatment. He is an intelligent man of good moral standing. He is divorced from his wife and would consider marriage again if permissible. What is your opinion? Please omit name.

M.D., Baltimore.

ANSWER.—As a rule the complement fixation test for syphilis, with icebox fixation, is somewhat more sensitive and specific than is the ordinary method of performing the test, so that we should say that the test mentioned may have some positive value. However, as nothing is said as to the degree of positivity of the icebox test, we would hesitate to say that

the patient was syphilitic, especially in the absence of a history of infection or of other symptoms of the disease. It is never wise to base a diagnosis on one test, especially when marriage is being considered. If this patient contemplates a remarriage, we would advise the discontinuance of anti-syphilitic treatment and a repetition of the fixation test at intervals of a few months over a period of at least one year. If the future tests prove negative, then marriage might be permissible.

TREATMENT OF PRURITUS VULVAE

To the Editor:—I have a puzzling case to treat. Some years ago a woman, now aged 38, began to have pruritus vulvae and was treated in Cleveland, where a physician told her that cutting the sensory nerves would give relief. She came here and one year ago I attended her at a premature still-born delivery, and after birth I instilled 50 per cent alcohol in the uterine cavity. She had no itching for six months. For the last six months I have treated her locally for chronic cervicitis, using the silver salts, antiseptics and caustics without relief except while treatment lasts. Physically, she is in fine condition. There is no glycosuria. I wonder what treatment you might suggest that may help. Please omit name.

M.D., Florida.

ANSWER.—Pruritus vulvae is frequently due to a chronic leukorrheal discharge. It should be emphasized that even a slight discharge may be responsible for intense itching.

Less commonly, pruritus is an independent clinical entity, in which the patient should be under the care of a dermatologist.

The chief sources of chronic leukorrhea (A. H. Curtis, THE JOURNAL, October 8, p. 1911) are the uterine cervix and Skene's ducts. Treatment should be directed toward eradication of these sources. Temporary relief from pruritus may be obtained from daily vaginal instillation of 2 or 3 cc. of a 3 per cent solution of tannic acid in glycerin. This is conveniently administered by means of a 5 cc. Luer syringe provided with a 2-inch rubber tip.

USE OF REFRACTOSCOPE

To the Editor:—I should like to know whether or not the Copeland "refractoscope" is considered such a valuable and practicable method of refraction as the manufacturers would have us believe. How do oculists regard it? Please omit my name.

M.D., Illinois.

ANSWER.—The Copeland refractoscope is an electric retinoscope, based on an ingenious application of old principles. It permits of accuracy and, with practice, is undoubtedly a valuable instrument. However, some ophthalmologists, after a rather extensive trial in private practice, have said they could not find any greater accuracy or any saving of time over the age-old plane reflecting mirror retinoscope. In short, the Copeland refractoscope is a valuable addendum to the ophthalmic armamentarium, but it is not the invaluable instrument that the slit lamp, for example, has proved to be.

TREATMENT OF INVERTED NIPPLES

To the Editor:—Will you kindly give me some suggestions concerning the treatment of very badly inverted nipples? Please omit my name.

M.D., New Jersey.

ANSWER.—Badly inverted nipples are a source of much trouble. Treatment is unsatisfactory. Traction with the fingers is the only available remedy of notable value. Wooden nipple shields afford the best protection from soreness that develops during nursing.

CONCENTRATED HYDRAGOGUE CATHARTICS

To the Editor:—In his paper on "Medical Treatment in Diseases of the Liver" (THE JOURNAL, October 9, p. 1211), Dr. Snell mentions "the concentrated hydragogue cathartics, after the method of Hay." Will you kindly give me the original reference to this method? Please omit name and address.

M.D., Massachusetts.

ANSWER.—The references requested are as follows:

Hay, Mathew: On Saline Cathartics, J. Phys. & Anat. **16:** 243, 391, 568, 1881-1882; **17:** 62, 222, 405, 1882-1883.

Hay, Mathew: On the Use of Concentrated Solutions of Saline Cathartics in Dropsy, *Lancet* **1:** 678 (April 21) 1883.

The author describes his method as follows: "As little food and liquid as possible are taken during the preceding night, and next morning three quarters of an ounce of sulphate of magnesia dissolved in two tablespoonfuls of water are given, no water to be given afterward."

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, Jan. 10-13. Sec., Dr. S. W. Welch, 519 Dexter Ave., Montgomery.

ARIZONA: Phoenix, Jan. 3-4. Sec., Dr. W. O. Sweek, 404 Heard Bldg., Phoenix.

COLORADO: Denver, Jan. 3. Sec., Dr. Philip Work, 324 Metropolitan Bldg., Denver.

CONNECTICUT: New Haven, Feb. 11. Chm., Bd. of Healing Arts, Dr. Charles M. Bakewell, New Haven.

DISTRICT OF COLUMBIA: Washington, Jan. 10. Sec., Dr. E. P. Copeland, 1801 Eye St., Washington.

HAWAII: Honolulu, Jan. 10-13. Sec., Dr. James A. Morgan, Young Bldg., Honolulu.

ILLINOIS: Chicago, Jan. 10-12. Supt., Mr. V. C. Michels, Springfield.

KANSAS: Topeka, Feb. 14. Sec., Dr. Albert S. Ross, Sabetha.

MINNESOTA: Minneapolis, Jan. 17-19. Sec., Reg. Bd., Dr. A. E. Comstock, 636 Lowry Bldg., St. Paul. Basic Science Bd., Jan. 3. Sec., Dr. E. T. Bell, U. of Minnesota.

NATIONAL BOARD OF MEDICAL EXAMINERS: Class A Medical Schools, Feb. 15-17. Dir., Dr. Everett S. Elwood, 1600 Walnut St., Philadelphia.

NEW YORK: Albany, Buffalo, New York and Syracuse, Jan. 24-27. Sec., Dr. H. Rypins, Education Bldg., Albany.

NORTH DAKOTA: Grand Forks, Jan. 3-6. Sec., Dr. G. M. Williamson, Grand Forks.

OREGON: Portland, Jan. 3-5. Sec., Dr. M. K. Hall, 816 Pittick Bldg., Portland.

PENNSYLVANIA: Philadelphia, Jan. 31-Feb. 4. Dir., Mr. C. D. Koch, Harrisburg.

RHODE ISLAND: Providence, Jan. 5-6. Sec., Dr. B. U. Richards, State House, Providence.

SOUTH DAKOTA: Pierre, Jan. 17. Dir., Dr. H. R. Kenaston, Bonesteel.

VERMONT: Burlington, Feb. 14. Sec., Dr. W. Scott Nay, Underhill.

WASHINGTON: Seattle, Jan. 16. Dir., Reg. Bd., Mr. Chas. R. Maybury, Olympia. Dir., Basic Science Bd., Mr. Chas. R. Maybury, Olympia.

WISCONSIN: Madison, Jan. 10-12. Sec., Reg. Bd., Dr. R. E. Flynn, 315 State Bank Bldg., La Crosse. Sec., Basic Science Board, Prof. M. F. Guyer, U. of Wisconsin.

WYOMING: Cheyenne, Feb. 1-3. Sec., Dr. G. M. Anderson, Citizens Bank Bldg., Cheyenne.

Arizona July Examination

Dr. W. O. Sweek, secretary of the Arizona State Board of Medical Examiners, reports the written examination held at Phoenix, July 5-6, 1927. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Five candidates were examined, all of whom passed. Twelve candidates were licensed by reciprocity. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent
Chicago Medical School	(1927)	85.6
St. Louis University School of Medicine	(1926)	85.5
Creighton University School of Medicine	(1927)	84.8
Western Reserve University School of Medicine	(1926)	94.2
Tokyo Woman's Special Medical School	(1920)	79.2

LICENSED BY RECIPROCITY		
College	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Los Angeles	(1910)	California
Rush Medical College	(1910)	Utah
University of Illinois College of Medicine	(1910)	Montana
Barnes Medical College, St. Louis	(1908)	Tennessee
Kansas City University of Physicians and Surgeons	(1919)	Nevada
Long Island College Hospital	(1914)	New York
Eclectic Medical College, Cincinnati	(1922)	Ohio
Medical College of Ohio	(1887)	Minnesota
Starland Medical College, Columbus	(1895)	Ohio
University of Pennsylvania School of Medicine	(1916)	New York
University of Texas School of Medicine	(1917)	California
University of Toronto Faculty of Medicine	(1910)	California

Massachusetts July Examination

Dr. Frank M. Vaughan, secretary of the Massachusetts Board of Registration in Medicine, reports the oral, written and practical examination held at Boston, July 12-14, 1927. The examination covered 17 subjects and included 70 questions. An average of 75 per cent was required to pass. Of the 164 candidates examined, 117, including 16 osteopaths, passed, and 47, including 25 osteopaths, failed. Twenty-one candidates were licensed by endorsement of their credentials. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent
College of Medical Evangelists	(1920)	85
Northwestern University Medical School	(1926)	78.9
University of Louisville School of Medicine	(1921)	75.8
Boston University School of Medicine	(1926) 80.3, 84.6, 85.1, (1927) 75.2, 78.6, 78.7, 82.4, 82.5, 83, 83.4, 84.4, 85.3	
College of Physicians and Surgeons, Boston	(1927)	75.9, 76.4, 77.1, 80.5

Harvard University Medical School.....(1922) 81.7, (1924) 81.5, 82.2, (1925) 83.2, 86.7, (1926) 82.2, (1927) 75, 82, 82.6, 82.7, 83.5, 83.6, 84.1, 84.5, 84.7, 86, 86.9.
Middlesex College of Medicine and Surgery.....(1924) 75, (1926) 75.6, 75.6, 76.4
Tufts College Medical School.....(1925) 75; (1926) 76.6, 77.4, 80.7, 82, 83.3, 83.8; (1927) 75.8, 77.4, 77.8, 79.3, 79.7, 79.7, 80, 80.7, 81.1, 81.1, 81.2, 81.3, 81.4, 81.8, 82.2, 82.2, 82.3, 82.6, 85, 85, 85.3, 85.7, 86.1, 86.3, 86.5, 86.6, 86.8, 87.1, 87.4, 88.2, 88.2, 88.5
University of Michigan Medical School.....(1925) 81.9
University of Minnesota Medical School.....(1925) 81.5
Creighton University School of Medicine.....(1926) 77.1
University of Nebraska College of Medicine.....(1926) 79.3
Columbia University College of Phys. and Surgs.....(1921) 84.6
Cornell University Medical School.....(1921) 87.7
Long Island College Hospital.....(1899) 75
Syracuse University College of Medicine.....(1926) 82
University of Buffalo School of Medicine.....(1919) 77.5
Hahnemann Medical College and Hospital of Philadelphia, Homeopathic.....(1926) 75.3
Jefferson Medical College of Philadelphia.....(1927) 85
University of Pennsylvania School of Med..(1920) 75; (1923) 75.3
Woman's Medical College of Pennsylvania.....(1925) 76
Meharry Medical College.....(1927) 77.1
McGill University Faculty of Medicine.....(1927) 83.6
University of Montreal Faculty of Med..(1925) 78.2; (1927) 75. 3, 76.2
University of Toronto Faculty of Medicine.....(1926) 82.5, 84
Osteopaths.....75, 75, 75.1, 75.1, 75.3, 75.9, 76.3, 77, 77.1, 77.5, 78.5, 78.9, 80.3, 80.5, 81.1, 81.3

College	FAILED	Year Grad.	Per Cent
Georgetown University School of Medicine		(1927)	71.2
Chicago Medical School		(1926)	67.2
College of Physicians and Surgeons, Boston		(1927)	61.1, 71.6, 73
Middlesex College of Medicine and Surgery		(1922)	68.2, 68.5; (1923) 67.8,* 68.1,* 68.3; (1926) 62.3, 65.5, 73
Kansas City University of Physicians and Surgeons		(1926)	59.3
St. Louis College of Physicians and Surgeons		(1923)	55.7
Laval University Faculty of Medicine		(1925)	55
University of Montreal Faculty of Medicine		(1921)	46.3; (1924) 62; (1925) 51.4, 70.7 †
National University of Athens, Greece		(1915)‡	30.7
Osteopaths			36.4, 51.2, 52.9, 54.1, 57.5, 59.7, 59.8, 62.7, 63.4, 63.5, 64.4, 65.5, 65.6, 66.6, 68.1, 68.7, 68.8, 69.7, 70.1, 71, 71, 71.6, 72, 72.1, 73.4

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Yale University School of Medicine		(1924)	N. B. M. Ex.
Johns Hopkins University School of Medicine		(1924)	N. B. M. Ex.
Harvard Univ. Med. School		(1923, 2), (1924, 7), (1925, 7)	N. B. M. Ex.
Albany Medical College		(1925)	N. B. M. Ex.
University of Vermont College of Medicine		(1925)	N. B. M. Ex.
University of Virginia Department of Medicine		(1925)	N. B. M. Ex.

* Graduation not verified.
† No grade given.
‡ Verification of graduation in process.

Utah July Examination

Mr. M. H. Welling, director of the Department of Registration of Utah, reports the written examination held at Salt Lake City, July 1-2, 1927. The examination covered 19 subjects. An average of 75 per cent was required to pass. Of the 6 candidates examined, 5 passed and 1 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
George Washington University Medical School		(1927)	89.1
Rush Medical College		(1927) *	82
University of Illinois College of Medicine		(1927)	86.8
Harvard University Medical School		(1926)	84.6
Creighton University School of Medicine		(1927)	78.7

College	FAILED	Year Grad.	Per Cent
St. Louis College of Physicians and Surgeons		(1918)	63.7

* This candidate will receive his M.D. degree on completion of one year's internship in a hospital.

Washington July Examination

Mr. Charles R. Maybury, director of the Washington Department of Licenses, reports the written examination held at Seattle, July 11-12, 1927. The examination covered 8 subjects and included 80 questions. An average of 75 per cent was required to pass. Of the 19 candidates examined, 18 passed and 1 failed. Seven candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
College of Medical Evangelists		(1927)	80
Northwestern University Medical School		(1927)	83
Rush Medical College		(1926) 86; (1927)	79
University of Illinois College of Medicine		(1926)	75
University of Michigan Medical School		(1917)	75
Syracuse University College of Medicine		(1920)	78
Western Reserve University School of Medicine		(1926)	86
University of Oregon Medical School		(1926) 77, 79, 80,	84, 91
Marquette University School of Medicine		(1927)	77
Queen's University Faculty of Medicine		(1926)	78
University of Manitoba Faculty of Medicine		(1916)	75
University of Toronto Faculty of Medicine		(1913), (1926)	79

College	FAILED	Year Grad.	Per Cent
Northwestern University Medical School		(1927)	71

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
College of Medical Evangelists		(1927)	California
State University of Iowa College of Medicine		(1926, 2)	Iowa
University of Michigan Medical School		(1926)	Michigan
University of Oregon Medical School		(1925), (1926)	Oregon
University of Texas School of Medicine		(1925)	Nebraska

Book Notices

CLINICAL AND ABNORMAL PSYCHOLOGY. A Textbook for Educators, Psychologists and Mental Hygiene Workers. By J. E. Wallace Wallin, Ph.D., Director Bureau of Special Education and Psycho-Educational Clinic, Miami University. Cloth. Price, $3. Pp. 649, with 34 illustrations. Boston: Houghton Mifflin Company, 1927.

The modern physician is aided in his investigations of the human mind and body by numerous assistants who have given special study to the technic of certain fundamental examinations. The psychologist has brought to the medical clinic exact systems of measurement which are of service in determining accurately the extent to which the human mind functions under various conditions. The book by Professor Wallin indicates the methods for determining the limits of the human senses and sensibilities. He provides a consideration of various intelligence tests with criticisms. Two parts of the book are devoted to motor factors and emotional development. An appendix provides an adequate bibliography and a study of the reliability of group intelligence tests. The book is exceedingly informative and provides an accurate picture of the trend of knowledge in its field.

HANDBUCH DER MIKROSKOPISCHEN ANATOMIE DES MENSCHEN. Herausgegeben von Wilhelm v. Möllendorff. Band V. Verdauungsapparat. 1-Teil. Mundhöhle. Speicheldrüsen. Tonsillen, Rachen. Speiseröhre. Serosa. Von T. Hellman und anderen. Paper. Price, 72 marks. Pp. 374, with 276 illustrations. Berlin: Julius Springer, 1927.

For many years a comprehensive work on the minute anatomy of the human body has been needed; recently the need has become acute not only among anatomists and pathologists but among clinical specialists as well. The present volume is the second issue of a work that will ultimately fill this need. It is a project of great magnitude, for in the past there have been few histologists who have had access to an adequate series of well preserved specimens of any viscus from the human body so that they were in a position to recognize normal conditions with certainty. The present work is a handbook of the cooperative type, sumptuously illustrated and beautifully printed. The presentation aims at the functional interpretation which is the keynote of modern histology. The ground covered by this issue is as follows: Oral cavity by S. Schumacher; thirty-four pages, fifteen illustrations. Tongue by S. Schumacher; thirty-one pages, ten illustrations. Salivary glands and pancreas by K. W. Zimmermann; 183 pages, 186 illustrations. Pharyngeal adenoid tissue by T. Hellman; forty-four pages, twenty-one illustrations. Pharynx and esophagus by S. Schumacher; forty-six pages, twenty-three illustrations. Peritoneum, including omentum, by E. Seifert; thirty pages, twenty-one illustrations. The treatise on the salivary glands includes the pancreas so far as it functions as the "belly spittal gland." It is not simply a detailed description of these glands from first-hand knowledge; it presents the fundamental problems involved in secretory activity, and the types of cells in the glands, with the evidence as to their contributions to the product that flows from the main duct. There is an exhaustive discussion of the cytology, that is, of the organs of the cell, their relation to the intracellular antecedents of the secretory products, and their changes during secretory activity. It is disappointing to find so little appreciation of the chemical problems involved here; greater familiarity with fresh ("supravital") cells would surely play havoc with the author's confidence in the reality of many intracellular structures that appear in microscopic sections. He has reviewed an enormous and confusing literature as only an

expert in the field could do it, and for years to come every one who enters on studies of secretion will be deeply indebted to him. The chapter on the tonsils and the neighboring "lympho-epithelial" tissue is also an admirable one. The physiologic discussion ably presents the various and often stridently discordant opinions concerning the tonsils.

OUTLINES IN HEALTH EDUCATION FOR WOMEN. By Gertrude Bilhuber, D.P.H., Associate Professor of Physical Education for Women, Purdue University, and Idabelle Post, B.S., Instructor in Physical Education for Women, Purdue University. Cloth. Price, $2. Pp. 192, with 32 illustrations. New York: A. S. Barnes & Company, 1927.

Women's organizations concerned with the promotion of health, and teachers in schools, colleges and universities are just beginning to appreciate the difficulties of proper education on health matters. For this group the present volume of outlines is planned particularly, and by them it is likely to be especially welcomed. Each of the outlines is preceded by a text and followed by special questions and a bibliography. Numerous charts and graphs supplement the facts made available in the outlines themselves. The appendix provides outlines for case records as well as a list of organizations interested in the health field. The book will no doubt require revision as continued experience is gained in this work. For the present, it constitutes one of the most useful volumes in the field that it covers.

THE BANANA: Its History, Cultivation and Place Among Staple Foods. By Philip Keep Reynolds. Cloth. Price, $2. Pp. 179, with illustrations. Boston: Houghton Mifflin Company, 1927.

In a volume replete with illustrations, the author traces the early history of the banana, the development of the industry, in fact, every possible relationship of importance to the growth, marketing and use of this fruit. A special chapter on the food value will be of interest to physicians, since it collects material from many places in convenient summaries. The author provides many facts, and at the same time keeps in view the romance that is inevitably associated with the growth of any great industry.

ELETTROCARDIOGRAFIA. Tecnica. Fisiologia. Patologia. Por Carlo Dalla Rosa, assistente clinica medica di Bologna. Paper. Price, 30 lire. Pp. 195, with illustrations. Bologna: L. Cappelli, 1926.

In the first part are discussed electrophysiology and the electrocardiograph. The second part treats of the normal electrocardiogram. The third section deals with the pathologic electrocardiogram. The title of the monograph is a little misleading, for in addition to the electrocardiographic details of the various types of cardiac irregularities the author briefly takes up the etiology, pathology and clinical manifestations. In some chapters, as in the one on auricular fibrillation, these phases of the subject are quite fully considered. There are many excellent and helpful illustrations, most of which are original. While the work contains little that is new, it is to be commended as a compact, well considered, reliable summary of the essentials of electrocardiography.

EARLY MEDICINE IN MARYLAND. By Thomas S. Cullen. Boards. Pp. 15, with 7 illustrations. Baltimore, 1927.

In 1637 Henry Hooper, a surgeon, arrived in Maryland and performed an inquest on a man killed by a tree. Dr. Thomas Cullen, in the handsome booklet containing this fact, records the progress of medicine in Maryland from that day to the present. The book is illustrated by numerous photographs of interest and of historical value, and the record is told in pleasant, somewhat reminiscent style. The book will be treasured by any one interested in the history of medicine.

THE TEETH AND THE MOUTH. By Leroy L. Hartman, D.D.S., Professor of Operative Dentistry, School of Dental and Oral Surgery, Columbia University. Cloth. Price, $1.50. Pp. 93. New York: D. Appleton & Company, 1927.

Dr. Hartman has prepared a catechism which will answer most of the questions that mothers now ask relative to the care of the teeth, particularly of the teeth of the child. The book is written in language that is as simple as that which characterizes Holt's famous catechism on the care and feeding of children, which it resembles in other ways.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits. Books listed in this department are not available for lending. Any information concerning them will be supplied on request.

AMERICAN MEDICINE AND THE PEOPLE'S HEALTH. An Outline with Statistical Data on the Organization of Medicine in the United States with Special Reference to the Adjustment of Medical Service to Social and Economic Change. By Harry H. Moore, Public Health Economist, United States Public Health Service. With an introduction by the Committee of Five of the Washington Conference of the Economic Factors Affecting the Organization of Medicine. Cloth. Price, $5. Pp. 647, with illustrations. New York: D. Appleton & Company, 1927.

Careful presentation of statistics leading to the view that state or organized medical practice is the only solution for good medical service to all the people.

THE RISE AND FALL OF DISEASE IN ILLINOIS. By Isaac D. Rawlings, M.S., M.D., in collaboration with William A. Evans, M.D., D.P.H., Gottfried Koehler, M.D., and Baxter K. Richardson, A.B. Published by the State Department of Public Health in commemoration of its fiftieth anniversary, 1927. Volume I. Cloth. Pp. 432, with illustrations. Springfield: State of Illinois, Department of Public Health, 1927.

History of the state health department.

A TEXT-BOOK OF PATHOLOGY. By Francis Delafield, M.D., LL.D., and T. Mitchell Prudden, M.D., LL.D. Revised by Francis Carter Wood, M.D., Director of the Pathological Department, St. Luke's Hospital, New York. Fourteenth edition. Cloth. Price, $10 net. Pp. 1339, with 850 illustrations. New York: William Wood & Company, 1927.

Another edition of this widely used textbook.

CARL FLÜGGES GRUNDRISS DER HYGIENE. Für Studierende und praktische Ärzte, Medizinal- und Verwaltungsbeamte. Von Dr. Bruno Heymann, a. o. Professor an der Universität Berlin. Tenth edition. Cloth. Price, 39 marks. Pp. 714, with 213 illustrations. Berlin: Julius Springer, 1927.

Latest edition of standard German textbook of hygiene.

DIAGNOSTIK UND THERAPIE DER KINDERKRANKHEITEN MIT SPEZIELLEN ARZNEIVERORDNUNGEN FÜR DAS KINDESALTER. Ein Wegweiser für den praktischen Arzt. Von Prof. Dr. F. Lust, Direktor des Kinderkrankenhauses in Karlsruhe. Fifth edition. Paper. Price, 10.50 marks. Pp. 523. Berlin: Urban & Schwarzenberg, 1927.

Another edition of a popular German textbook on children's diseases.

UROGRAPHY. By William F. Braasch, B.S., M.D., F.A.C.S., Head of Section on Urology, Mayo Clinic. In collaboration with Benjamin H. Hager, B.S., M.D., Associate in Section on Urology, Mayo Clinic. Second edition. Cloth. Price, $13 net. Pp. 480, with 759 illustrations. Philadelphia: W. B. Saunders Company, 1927.

A guide to an extremely specialistic technic.

PRACTICE OF UROLOGY AND SYPHILOLOGY. A Surgical Treatise on Genito-Urinary Diseases and Syphilis. By Charles H. Chetwood, M.D., LL.D., F.A.C.S., Attending Urologist and Director of Service, French Hospital. Fourth edition. Cloth. Price, $9. Pp. 879, with 314 illustrations. New York: William Wood & Company, 1927.

New edition of a standard textbook.

KEEPING THE BABY WELL: With Special Reference to General Management and Dietetics. By John Howell West, Ph.B., M.D., Chief of Department of Pediatrics at the Easton Hospital. Cloth. Price, $2 net. Pp. 233. New York: G. P. Putnam's Sons, 1927.

Another guide for mothers in a field overpopulated with books.

THE TEETH AND THE MOUTH. By Leroy L. Hartman, D.D.S., Professor of Operative Dentistry, School of Dental and Oral Surgery, Columbia University. Cloth. Price, $1.50. Pp. 93. New York: D. Appleton & Company, 1927.

A catechism of simple information on the mouth and teeth.

A REFERENCE HAND-BOOK OF GYNECOLOGY FOR NURSES. By Catharine Macfarlane, M.D., F.A.C.S., Professor of Gynecology, Woman's Medical College of Pennsylvania. Fifth edition. Cloth. Price, $1.50 net. Pp. 170, with 76 illustrations. Philadelphia: W. B. Saunders Company, 1927.

A textbook of essentials for use in nursing education.

STÖRUNGEN DES TRIEB- UND AFFEKTLEBENS (Die parapathischen Erkrankungen). Band IX. Teil 1. Zwang und Zweifel. Von Dr. Wilhelm Stekel. Paper. Price, 30 marks. Pp. 633. Berlin: Urban & Schwarzenberg, 1927.

More of Stekel's psychoanalyses.

RECENT ADVANCES IN ANATOMY. By H. Woollard, M.D., Elder Professor of Anatomy, University of Adelaide. Cloth. Price, $3.50. Pp. 302, with 73 illustrations. Philadelphia: P. Blakiston's Son & Company, 1927.

Some of the newer facts about the human structure nicely recorded.

OUTLINE OF PHARMACOLOGY INCLUDING TOXICOLOGY AND PRESCRIPTION WRITING. By H. Meyer, B.S., and F. Danziger, B.S. Paper. Price, $2.50. Pp. 88, with 4 illustrations. Chicago: Dun-Rite Letter Service, 1927.

Mimeographed outline for students.

LIFE'S SUNSHINE. Memories, Sayings, Songs and Sentiments. By George H. Bruce. Cloth. Price, $1.50. Pp. 91. New York: Avondale Press, 1927.

A collection of near wit and humor for use in luncheon club addresses.

EPIDEMIC ENCEPHALITIS (Encephalo-Myelitis). By Leo M. Crafts, B.L., M.D. Cloth. Price, $3. Pp. 237, with illustrations. Boston: Richard G. Badger, 1927.

A monograph, poorly printed, based largely on the author's experience.

KREBS UND SEINE WAHRE URSACHE. Von J. Winkelhagen. Boards. Price, 2.40 marks. Pp. 75. Hamburg: J. Winkelhagen, 1927.

Monograph proving that cancer is a racial human disorder.

PROCEEDINGS OF TWELFTH ANNUAL CONFERENCE OF THE NATIONAL COMMITTEE FOR THE PREVENTION OF BLINDNESS. Including Joint Sessions with American Social Hygiene Association, National Organization for Public Health Nursing, Eastern Association of Indian Affairs. 1926. Paper. Pp. 112. New York: National Committee for the Prevention of Blindness, 1927.

Miscellany

TREATMENT OF RINGWORM WITH THALLIUM ACETATE

The use of thallium acetate as a remedy for ringworm of the scalp has been referred to previously in THE JOURNAL (Dowling, G. B., and Kelman, R.: *Lancet* **1**:389 [Feb. 19] 1927; abstr. THE JOURNAL, May 14, p. 1605. Firth, S. J.: *Brit. M. J.* **1**:1097 [June 18] 1927; abstr. THE JOURNAL, September 3, p. 826. Curtis, F. R.: *Lancet* **1**:1290 [June 18] 1927; abstr. THE JOURNAL, September 3, p. 827. Dowling, G. B.: *Brit. M. J.* **2**:261 [Aug. 13] 1927; abstr. THE JOURNAL, October 29, p. 1554). This salt, $Tl\,C_2H_3O_2$, is given by mouth, and acts by producing alopecia. The dose recommended is 8 mg. per kilogram of body weight (about one-half grain for each 10 pounds) in a single dose, given by mouth in sweetened water. The hair begins to fall out in six or eight days, epilation usually being complete by the nineteenth day. If the first dose fails, a second must not be given for some months, as cumulative toxic effects may supervene.

Dr. Maurice Drummond (*Brit. M. J.* **1**:329 [Feb. 19] 1927) says that the method has been used successfully in more than 500 cases by Cicero and Peter in ringworm cases in the schools in Mexico, and in more than 100 cases by Buschke and Langer in the Rudolf Virchow Hospital, Berlin. It is essential that the protoxide of the acetate of thallium should be used; he has employed the preparation of Kahlbaum. The Germans found that 8 mg. per kilogram of body weight was the most satisfactory dose for children of all ages. Peter, in Mexico, gave 5 mg. per kilogram for children under 5 years. Drummond found it only just sufficient in the case of the four children whom he had treated. Rapid and profuse fall of the hair occurred on the fifteenth day. The action of the drug is apparently selective, the eyebrows and fringe on the front of the head being unaffected. The drug is contraindicated in the presence of albuminuria. The greatest care is necessary in the weighing of the child and of the drug.

According to W. E. Dixon (*Proc. Roy. Soc. Med.* **20**:1197 [June] 1927) there is no other substance which acts like thallium in producing the characteristic alopecia in both men and animals. All animals, with the possible exception of the guinea-pig, when injected with thallium, lose their hair. The hair at first becomes less glossy, is easily rubbed off, and later is shed. The alopecia begins on the nape of the neck and round the ears, and the last hairs to fall are those round the chin and nose.

With thallium there are two unusual and remarkable effects associated with one drug: the production of alopecia and a definite effect on the autonomic nervous system. And as alopecia areata is frequently associated with nervous phenomena, it may not unwarrantably be suggested that the autonomic system has a great part in its causation. Thallium rubbed into the skin does not depilate, nor does it locally affect the blood vessels; it is only after absorption that this metal affects the hair. Again, in postmortem examinations of animals that have been treated with thallium, the metal is found in almost every tissue of the body and can easily be detected spectroscopically; the skin, however, retains less thallium than any other tissue. This is in marked contrast to arsenic, which is excreted by the skin, the skin always containing relatively large amounts.

J. H. Twiston Davies (*Brit. M. J.* **2**:79 [July 9] 1927) calls attention to one distinct source of danger in the therapeutic use of thallium acetate, the possible coexistence with ringworm of alopecia areata or, possibly, allied neuroses. Encouraged by the obvious stimulation of hair growth that takes place immediately before defluvium with an ordinary dose, he administered subepilating doses to some patients with alopecia areata. A boy, aged 14, with alopecia universalis, was given 6 mg. of thallium acetate per kilogram of body weight. Four days later he had pains in the knees and ankles so severe that he had to go to bed with a "cradle" over his legs for a fortnight. A man, aged 35, with alopecia areata (a recent case with rapidly extending defluvium) was given 5 mg. per kilogram (300 mg. altogether). Two days later he had "pins and needles in the muscles" from the waist downward, severe pains in the joints of the lower extremities, and loss of sensation in the legs and feet, with inability to walk and emaciation. A girl, aged 12, with alopecia areata, which had preexisted and persisted after the cure of ringworm by roentgen-ray epilation, was given 4 mg. of thallium acetate per kilogram. She had severe pains in the knees, not, however, bad enough to keep her in bed. The alopecia had proceeded to total alopecia (sparing the "fringe") within three weeks.

James Devane (*M. Press & Circular* **74**:95 [Aug. 3] 1927) reports on forty-five cases of epilation by thallium acetate. He never has seen any toxic symptoms follow. Two cases have been treated from two to fourteen years. The dosage varied between 7.5 and 8 mg. per kilogram of body weight. With the lower dosage, epilation has been secured in some cases and failed in others. With the full 8 mg. dosage, epilation followed in all cases. Three injunctions should be observed strictly. The body weight, nude, should be obtained accurately, a standard reliable preparation should be used, and the kidneys must be functioning properly. Thallium is excreted by the kidneys, and the kidneys are especially liable to injury by the toxic elements in the drug. In regard to administration, Devane has given a gentle purge the day before treatment. He has ground the required dose in tablets into a fine powder, dissolved this in a little hot water, and given no food for four hours after. The potion is tasteless; even the youngest children make no objection to taking it, and sip it like milk. The hairs get loose about the sixth to the eighth day. On the tenth day, one can begin to pull the hairs out with a light pull separately or in bundles. From the sixteenth to the nineteenth day the whole head should be bald. Buschke recommends a zinc lime cap on the eighteenth day to secure perfect epilation. From 5 to 10 per cent tincture of iodine and 10 per cent sulphur petrolatum can be rubbed in from the beginning, and the head should be washed thoroughly once or twice. The hair grows again after four weeks; first a colorless down; this is followed by a strong growth, and finally complete regeneration after three months. Thallium is cumulative in its action. It is eliminated after two and a half months. The thallium treatment can be combined with roentgen rays. For this, 4 mg of thallium acetate per kilogram may be combined with one-third unit skin dose and 0.5 mm. aluminum filter, the head being divided into five fields.

Medicolegal

Cataract Following Injury—Use of Physician's Letter

(Hinrichs v. Davenport Locomotive Works et al. (Iowa), 214 N. W. R. 585)

The Supreme Court of Iowa, in affirming a judgment in favor of the claimant for compensation, says that in March, 1923, a piece of steel hit him in the left eye, causing a slight cut or injury. About three or four months after that his sight failed. By the latter part of 1925, he had lost the sight of his eye and it was ascertained by an examination that he had a cataract. His testimony that he suffered constant pain in his eye from the time of the injury must be given considerable weight on the issue of causal connection. While there was disagreement in the testimony of the expert witnesses, it was peculiarly the province of the industrial commissioner to accept the testimony of such of those witnesses as seemed to him most consistent with all the testimony and of the greater credibility. There was sufficient evidence in the record to sustain the inference drawn by him that the loss of sight of the eye was due directly or indirectly to the injury. It was not material that this court might, independent of the conclusion of the commissioner, arrive at a different result. It was true that the commissioner stated that, as he viewed the facts, the issue was close, but his finding, if based on competent evidence, would not be disturbed on appeal.

Strict rules of evidence are not to be applied in proceedings before the industrial commissioner. He permitted the claimant to introduce in evidence a letter signed by a physician, in which the physician stated that he had made an examination of the claimant and that in his opinion the cataract was the result of an injury to the eye. This court is of the opinion that the letter was not admissible and that it should have been given no consideration by the commissioner. This holding did not, however, necessarily entitle the employer to a reversal and a remand of the case. The letter was admitted by the commissioner, as stated by him, for what it was worth.

Death from Sarcoma Following Injury Compensable

(Winchester Milling Corporation et al. v. Sencindiver et al. (Va.), 138 S. E. R. 479)

The Supreme Court of Appeals of Virginia, in affirming an award of compensation under the workmen's compensation act for the death of an employee from sarcoma after an injury to his right side, says that whatever view the court might take of the medical opinions, they were frankly and at best but theories. Taking them as they were in connection with the facts narrated, however, and taking a common sense, practical view, as courts and commissions must take of the ordinary happenings of life, boiled down to its last analysis, the medical theory is that there is a relationship between the receipt of injury and origin of sarcoma, and that the degree of injury plays no important part. With this in mind, the court finds that a perfectly healthy, strong man, who has never lost any time from work or complained of any illness, suffers an injury and from that time on is incapacitated; he grows worse and worse, and sarcoma develops at the point of injury, from which he dies. The lay mind, under such circumstances, can reach no other conclusion than that reached by the industrial commission; namely, that the sarcoma was either caused by the injury or was aggravated by it. As the chairman of the commission well said:

> The general rule clearly to be adduced from the decisions in this type of case is that if the facts show a causal connection between the injury and the development of cancer, then the two cannot be separated, and the victim of the cancer is entitled to compensation. It frequently appears in the reports of these cases that the doctors disagree as to the probable connection between a blow and the development of cancer, but from the standpoint of the compensation act, where a workman is apparently healthy, as was the case here, and able to perform his regular work, and immediately following a severe blow a condition sets up which later turns out to be cancerous, the commissioner believes that the connection between the blow and such development is clear.

To this the court may add that the courts have in general found no difficulty, in cases similar to this one, in applying the ordinary rules of evidence, and in drawing the ordinary conclusions of cause and effect from established facts, and this court finds none. This, the court doubts not, courts will continue to do with a full sense of justification and without apology until the cause of cancer is definitely and scientifically established.

Use of "Dr." Before Name and "Optometrist" After It

(Davis v. California State Board of Optometry et al. (Calif.), 257 Pac. R. 197)

The District Court of Appeal of California, second district, division 1, in affirming a judgment that the appellant's petition for a writ of review be denied, says that he was convicted by the state board of optometry of the offense of unprofessional conduct in using the title of "Dr." as a prefix to his name, whereupon the board pronounced judgment against him that his certificate of registration as an optometrist be suspended for the period of one year. The optometry law of the state declares that the certificate of registration of any person registered as an optometrist may be revoked or suspended by the state board of optometry "when the holder (the registrant) uses the title of 'doctor' or 'Dr.' as a prefix to his name." In the instant case the question of fraud or injury to the public was not in issue. Neither the passage of the act, nor its possible or probable effect on either the public at large or on designated individuals, was involved. The act has become the law of the land, and should be enforced according to its meaning and intent, properly construed by the judicial branch of the government. In the face of the positive declaration of the statute, this court would not be justified in what on its part would amount to attempted legislation to the effect that, by the use of the word "optometrist" following the name of any person unauthorized to use the prefix "doctor" or "Dr." before his name, the public would not be defrauded or misled to its injury, and consequently that in such circumstances the apparently plain intent of the statute might be evaded and rendered of no consequence. That, purporting to act with the power to adopt rules and regulations, the board had adopted a rule by which, under certain specified restrictions, a registered optometrist might use the title "doctor" or "Dr." as a prefix to his name, was not available as affecting his rights in the premises, even conceding, without deciding, that the rule was discriminatory as against him. It was clear from the wording of the statute that, whatever powers the board may have had with reference to the adoption of rules and regulations, such powers could be exercised in such manner only as was not inconsistent with the express provisions of the statute.

Not Negligent in Use of Cast—Optimistic Prognosis

(Landoski v. Mueller (Wis.), 214 N. W. R. 329)

The Supreme Court of Wisconsin, in reversing a judgment for $10,000 damages, which was rendered on a verdict in favor of the plaintiff, and remanding the cause with directions to dismiss the complaint, says that a roentgenogram taken in September, 1924, showed that the right femur of the plaintiff, a boy then about 13 years of age, was displaced upward, with a partial destruction not to exceed one-half its head, and showed some disease or softening of the bony cavity in which the femur articulated. Prior to that, for more than a year, fistulas would at times open up and then heal over. On October 29, at a hospital, the boy was examined by the defendant, who had for many years specialized in orthopedic surgery. The defendant informed the boy's father of the existence of infection in the hip, that the process of healing would be slow, and that it was advisable to put the right leg in a plaster cast; but he gave no treatment then. On November 5 the boy was taken to the operating room by the defendant. There were about eight layers of cotton placed over the entire leg, a bandage was put over those, and a plaster cast was applied, extending from just above the ankle up to and near the navel, with openings or joints at the groin, and with two places freed on the cast to permit of access to and the dressing of two active fistulas. About

December 11 the defendant advised that the boy could be returned to his home, the cast to remain as it was until March, and the boy to be under the care of a local physician, to whom the defendant wrote:

> I straightened out his right leg, and since his condition is due to old osteo-arthritis of the femur, which apparently started in the clinical picture of a juvenile osteochondritis, the correction stirred up again the old process. . . . If you should find it necessary to enlarge the opening of the abscess, please do so. I am certain that within a few weeks the whole condition will be cleared up, and that the boy then can be up and about.

The boy was visited about once a week thereafter by the local physician, who found no occasion for doing anything as to enlarging the opening of the abscess during these visits. About February 1 the boy complained of pain or a burning sensation in the limb. A swelling appeared, and the local physician discovered pus in considerable quantity within the cast, and promptly removed it, finding a large quantity of pus and several abscesses or open fistulas in the groin. The boy remained in bed until about January, 1926, after which he walked with crutches.

In a special verdict the jury answered "Yes" to each of the questions: "1. Did the placing of the plaster cast . . . November 5, 1924, with directions to keep the same in position, as was done by defendant, constitute negligence on his part? 2. Did such negligence proximately cause an injury to the plaintiff's physical condition and health?" But there was no support in the testimony for any proper conclusion by a jury that the cast as originally placed on the limb was more tightly attached to the limb than proper practice required. Under the facts in this case, the answer of the plaintiff's medical witness ascribing wrong practice to the defendant should not have been permitted to stand or be considered by the jury, inasmuch as it was so plainly predicated on facts required of the witness to be assumed as true, which did not exist; namely, that there had been by the defendant an improper covering of open fistulas by a too tight plaster cast.

The testimony was undisputed that a serious progressive necrotic condition or breaking down of the bone tissue had existed for more than a year before the defendant saw the case. All that he could then be expected to do was to assist nature in checking further inroads by the infection then existent in the boy's hip. No serious contention was made but that the use of a plaster cast, whereby the bones of the limb could be kept at rest, was proper and universally accepted practice. The defendant was too optimistic in his prognosis; that, however, was not, and could not be, charged against him as an element of negligence.

Knowledge and Collusion of Medical Examiner

(Emery v. New York Life Ins. Co. (Mo.), 295 S. W. R. 571)

The Supreme Court of Missouri, division number 1, in reversing a judgment for the plaintiff which was affirmed by the Springfield Court of Appeals, says that the policy of life insurance sued on bore date of July 16 and the insured died, December 20. The defendant company contended that the policy was procured by fraud and false representations in the application therefor as to the physical condition and health of the insured, and by concealment of the fact that she was then afflicted with the disease of goiter, which later caused her death. In reply, the plaintiff said that the defendant's medical examiner examined her and at the time saw, or by the exercise of ordinary care could have seen, the goiter at that time, and the defendant was estopped from claiming that it was unaware of its existence.

The trial court's finding of the issues for the plaintiff was evidently based on the theory that the knowledge of the defendant's local medical examiner was imputable to it, because there was no suggestion in the evidence that any other officer or agent of the company knew of the insured's having the disease of goiter at the time her application for insurance was received and acted on. But the principle that the knowledge of an agent must be imputed to his principal is entirely inapplicable in a case in which the conduct of the agent raises a clear presumption that he would not communicate the fact in controversy. And such a presumption arises where the agent and the applicant for insurance join in an attempt to deceive the insurer and thus fraudulently procure insurance. An agent thus acting is not only stepping outside the limits of his authority, but is known to the applicant to be doing so.

It is not necessary that collusion on the part of the applicant and the agent be shown by direct evidence. Where an applicant falsely answers a question, and, such falsity being known to the agent, he nevertheless writes out the answer and forwards the application to the insurer, who issues a policy thereon, it will be presumed that there was collusion between the applicant and the agent. In the instant case there was no specific finding by the court of collusion between the applicant and the medical examiner, but from the facts which the court did find the conclusion was inescapable that they were joint participants in the fraud attempted to be perpetrated on the defendant. It followed that the judgment of the trial court must be reversed.

In a separate opinion one of the justices says that, while it might be that the defendant's medical examiner, as the trial court found, knew that the applicant had a goiter, it did not follow that he knew she had exophthalmic or toxic goiter, and, as a physician, testifying for the defendant said, it is the person having the latter form of disease who is not insurable by insurance companies generally.

Proceedings to Exclude from Unlawfully Practicing

(Fraser v. State ex rel. Biggs, Solicitor (Ala.), 113 So. R. 289)

The Supreme Court of Alabama says that this was a proceeding in the nature of quo warranto by the state, on the relation of Biggs, solicitor, under subdivision 1 of section 9932 of the code of Alabama, to exclude respondent Fraser from unlawfully practicing the profession of a chiropractor in the treatment of human beings for disease. It has been fully settled that the proceeding is a civil proceeding, and is not governed by the principles and rules of practice applicable to criminal cases. Hence the respondent's demand that she be allowed two strikes for every one allowed to the state in the selection of a jury, as in criminal cases, was properly denied.

The information, filed on March 31, 1925, alleged that the respondent had unlawfully intruded into the profession of treating, or offering to treat, diseases of human beings since Aug. 18, 1924, "and is still unlawfully treating, or offering to treat diseases of human beings in Monroe County, Ala." The trial court, over the respondent's objection, allowed the state to show that she inserted advertisements of herself as a chiropractor, offering to treat the public generally for disease, subsequent to the filing of the information, and also that she treated patients for diseases or abnormalties after that time. If this were a criminal prosecution for unlawful acts of medical practice, acts occurring after the filing of the information could not be properly shown, unless they were so connected with the acts charged as to illustrate a criminal intent, where the intention was material. But the scope of this proceeding, from its very nature, involves an inquiry into the conduct of the respondent down to the trial of the cause; and, no license to practice being shown, all acts of the respondent in the treatment of disease, and all continuing offers to treat it, are relevant and competent evidence of an unlawful intrusion into the practice of medical healing, and are a sufficient basis for the judgment authorized by the statute (code, section 9944); namely, that the intruder "be prohibited from practicing such profession."

Some of the witnesses for the state were allowed, over the respondent's objection, to testify to the ailments of their children or other relatives whom they took to the respondent for medical treatment, and who were treated by her, the objection being that these witnesses were not experts, and were not qualified to testify to the existence of disease conditions. Most of these items of testimony related to matters open to ordinary observation and understanding, as to which any observer might properly speak. However, the particular nature of the ailments treated by the respondent was not of material importance. It was enough that she offered to treat, and did treat, human ailments or abnormalities, of whatever kind, for the purpose of curing them, or of giving relief.

On the cross-examination of some of the state's witnesses, they stated—evidently in response to leading questions—that their respective cases treated by the respondent were "emergency" cases; and the respondent's counsel invoked the protection of section 2872 of the code, in the chapter regulating the practice of medicine, which provides:

> Nothing in this chapter shall prohibit the administration of domestic remedies in a family by any member thereof, or prohibit any person from rendering service to a sick or injured person in an emergency, provided that the person rendering such service does not pursue the occupation of a physician.

Apart from the obvious fact that most of the treatments administered by the respondent were not emergency cases within the meaning of the statute, the last clause of the statute itself excluded her from its protection.

On the undisputed evidence the petitioner was entitled to the relief prayed, and the jury was properly instructed that the respondent was guilty of the matters charged, if it believed the evidence. Judgment for the petitioner is therefore affirmed.

Burning in Treatment of Goiter with Roentgen Rays

(Kuehnemann v. Boyd (Wis.), 214 N. W. R. 326)

The Supreme Court of Wisconsin, in reversing judgment for damages obtained by the plaintiff and remanding the cause with instructions to dismiss the plaintiff's complaint, says that the defendant physician and surgeon undertook the treatment of a toxic goiter from which the plaintiff was suffering. He gave alternate treatments of the roentgen ray and the actinic ray, a treatment of each ray once a week for a period of five weeks, during which time the plaintiff's condition improved steadily, and no untoward results of the application of the treatments were observed. The defendant then went to Europe, and while attending a meeting of a medical society in London was told that if he would remove one filter from the roentgen-ray machine he would secure quicker results. On his return home he renewed the treatments in exactly the same manner that he had administered them before, except that he used but one filter instead of two in administering the roentgen ray. During the night after the first treatment the patient noticed a soreness and burning at the side of her neck, and in the morning it was swollen. When she reported it to the defendant, he said that he thought perhaps she had taken a cold. After the second treatment with the roentgen ray the defendant told ther that she had a roentgen-ray burn.

It was fundamental that, in order to recover damages in this case, the burden was on the plaintiff to prove negligence on the part of the defendant. In order to support the conclusion that the burn was the result of the defendant's negligence, it was claimed that the treatment given prior to his departure for Europe resulted in no burn and disproved that the plaintiff had a hypersensitive skin. The defendant admitted that in administering the treatment on his return he used but one filter instead of two, and that this resulted in a greater dosage, but this did not prove that the dosage given after his return was an overdosage, or that the dosage given prior to his departure was a normal dosage. It simply proved that the dosage given in his first treatments did not, while the dosage given in the latter treatments did, burn the skin. It left entirely to speculation whether the burn was the result of an overdosage, or whether it was due to the hypersensitiveness of the skin. There was no evidence in the case to establish the fact that the dosage from which the burn resulted was an overdosage.

It was the defendant's duty to exercise that degree of care, diligence, judgment and skill which physicians in good standing in the same school of medicine usually exercise in the same or similar localities, under like or similar circumstances, having regard to the advanced state of medical or surgical science at the time. In order to hold him liable, the burden was on the plaintiff to show that he failed in the requisite degree of care and skill. That degree of care and skill can be proved only by the testimony of experts. Without such testimony the jury has no standard which enables it to determine whether the defendant failed to exercise the degree of care and skill required of him. The doctrine of res ipsa loquitur (the thing speaks for itself) is not applicable to malpractice cases between patient and physician. There is some disagreement in the authorities as to whether this doctrine applies where results such as this arise from roentgen-ray treatments. This court sees no reason why the same rule should not apply to roentgen-ray treatments given by a physician to a patient for curative or healing purposes. Where physicians minister these treatments to patients for curative and healing purposes—where the bona fide relation of physician and patient exists—this court sees no reason why proof of a bad result should constitute proof of negligence on the part of the physician, any more than when any other agency is applied or ministered.

The defendant's statement, "The technic and formula that I used conformed to medical standards in this locality," being undisputed, must be accepted as the standard of the care and skill required of him, and there being no evidence to show that he did not meet this degree of care and skill, there was no evidence to support the verdict for the plaintiff. Some stress was placed on the testimony of the plaintiff to the effect that the defendant told her that the burn was not the result of accident, but that it was due to a lack of knowledge. It was admitted in the case that the defendant withdrew one filter from the roentgen-ray machine because of the advice received by him from the physician in London. If the withdrawal of this filter was, in fact, bad practice, the mere circumstance that he was advised so to do by the physician that he met in London would constitute no defense. If, as a matter of fact, it was proper practice to withdraw the filter, then it mattered not what or who induced the defendant to pursue the practice. His ignorance was immaterial if his practice was right.

Leaving Gauze in Nasal Passage After Operation

(Hurst v. Reeder (Ind.), 157 N. E. R. 101)

The Appellate Court of Indiana, in affirming a judgment for $500 damages in favor of plaintiff Reeder, says that the complaint alleged that she employed the defendant to perform an operation for the removal of her tonsils and adenoids, which operation was performed in such a negligent manner that a roll or pad of gauze was left in her nasal passage, causing much pain and suffering and a nauseating odor and excretion. The testimony of the defendant and other physicians and surgeons showed that the operation was performed skilfully and according to the approved practice in such operations; but the questions as to whether or not the defendant was negligent in leaving the roll of gauze in the plaintiff's nasal passage for a period of nine days was a question of fact for the jury to determine from all the evidence in the case. There was evidence in the record by expert witnesses to the effect that, if the gauze was so left in the plaintiff's nasal passage for a period of nine days, it was not the proper practice, and would result in injury to the patient. The question as to who placed the gauze in the plaintiff's nasal passage was also a question of fact for the jury to determine from all the evidence. Where there is evidence to sustain the verdict, this court will not weigh the evidence. The defendant complained of the amount of the verdict, but this court would not be justified in reversing the judgment on account of the amount thereof, as nothing appeared in the record to indicate that the jury was in any way influenced by bias, prejudice or partiality. The court concedes the law to be that questions requiring scientific or expert knowledge can be answered only by those possessing the requisite skill and knowledge to give their answers probative value, and persons not qualified are not competent witnesses as to such questions.

Society Proceedings

COMING MEETINGS

District of Columbia, Medical Society of, Washington, January 4. Dr. C. B. Conklin, 1718 M Street, N.W., Washington, D. C., Secretary.

Society of American Bacteriologists, Rochester, N. Y., December 28-30. Dr. J. M. Sherman, Dairy Industry Building, Ithaca, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in America for a period of three days. No foreign journals are available prior to 1921, nor domestic prior to 1923. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

174: 579-730 (Nov.) 1927

*Chronic Pseudo-Appendicitis Due to Intercostal Neuralgia. J. B. Carnett, Philadelphia.—p. 579.
*Fistula as Complication of Peptic Ulcer: Gastroduodenal Fistula. R. T. Monroe, Boston.—p. 599.
Cancer of Esophagus. J. Friedenwald, W. F. Zinn and M. Feldman, Baltimore.—p. 609.
*Treatment of Arthritis with Salts of O-Iodoxy-Benzoic Acid. J. E. Cottrell, Philadelphia.—p. 623.
Effect of Distention of Stomach and Colon on Location of Cardiac Dulness. W. A. Brams and R. A. Arens, Chicago.—p. 633.
*Treatment of Hay-Fever with Ephedrine. F. W. Gaarde and C. K. Maytum, Rochester, Minn.—p. 635.
*Hay-Fever and Asthma: Importance of Acnidas as Cause. R. M. Balyeat and T. R. Stemen, Oklahoma City.—p. 639.
*Conditions Under Which Iodine Will Cause Change in Basal Metabolic Rate in Man. I. Occurrence in Conditions Other Than Exophthalmic Goiter. K. A. Martin, New Haven, Conn.—p. 648.
*Epidemic Encephalitis. T. P. Sprunt, Baltimore.—p. 660.
Genus Proteus in Meningitis. J. B. Neal and H. Abramson, New York.—p. 665.
Etiology of Granuloma Inguinale: Eighteen Cases. M. F. Campbell, New York.—p. 670.
Sedimentation Reaction in Cancer. E. H. Rubin, New York.—p. 680.
*Familial Epistaxis Without Telangiectasia. H. Z. Giffin, Rochester, Minn.—p. 690.
*Liver Dysfunction in Migraine. J. S. Diamond, New York.—p. 695.

Chronic Pseudo-Appendicitis Due to Intercostal Neuralgia.—After an extensive painstaking study of patients and of the literature on appendicitis, Carnett has been unable to find a symptom complex which warrants a preoperative diagnosis of (clinical not microscopic) chronic appendicitis and which will be relieved by appendectomy. He is firmly convinced that: (1) "chronic appendicitis" as ordinarily seen under the microscope does not give clinical symptoms; (2) the clinical symptoms that heretofore have been ascribed to "chronic appendicitis" are not caused by the appendix and are not physically cured by appendectomy. Patients having the right-sided syndrome of chronic pain and tenderness present somewhat diversified pictures that are uniformly consistent with intercostal neuralgia but are not consistent with any other single disorder.

Fistula as Complication of Peptic Ulcer.—Monroe's case was the only one of its kind in approximately 28,000 medical admissions, and one of a total of eleven similar cases on record. The complication consisted of a fistulous tract between the stomach and the duodenum caused by the perforation of a chronic gastric ulcer.

Treatment of Arthritis with Salts of O-Iodoxy-Benzoic Acid.—All but three of twenty-one patients treated by Cottrell with salts of o-iodoxy-benzoic acid have shown improvement of varying degree. Relief of pain is often prompt and marked, especially in acute and subacute cases; some patients complain of a preliminary increase in pain for a few hours after an injection. In the great majority of chronic cases with crippling, there has been improvement of function, from slight to very marked. Some patients who were unable to close the hands, or to get the hands to the head, or to rise without assistance, were able, after treatment, to perform those movements. Two patients who had had especially varied and intensive previous treatment both said that this drug was the first thing that had ever benefited them. The drug is best given in "courses" of six or eight doses at semiweekly intervals, with a rest of from three to six weeks between courses. One patient in this group has received three courses totaling twenty injections. Others have received from three to seventeen doses. All but three have received at least part of their treatment intravenously. For patients with whom great difficulty is experienced in intravenous injection, the drug may be given by mouth or by rectum. For oral administration, calcium o-iodoxy-benzoate is preferable to the ammonium salt, as it seems to produce less gastric irritation. A larger dose, usually 1.5 Gm., is given in capsules of 0.5 Gm. each during a few hours, the patient preferably fasting or eating very lightly before the administration of the drug. The dose is repeated approximately twice a week. Slight nausea is sometimes induced, rarely vomiting, and very rarely (one patient only in this group) any other reaction. For rectal administration, the dose is 1 or 1.5 Gm. of ammonium o-iodoxy-benzoate in 2 per cent solution, given after a cleansing enema; reaction of any kind is unusual, and the drug is usually retained. Intravenous injection is the method of choice in administering the drug, and for this the ammonium salt is used. The standard dosage of ammonium o-iodoxy-benzoate is 1 Gm. dissolved in 100 cc. of sterile distilled water, given approximately twice weekly. It is injected by the gravity method, and must be given slowly, from ten to twenty minutes being allowed for 100 cc. to run in. Rapid administration tends to produce severe reactions.

Treatment of Hay-Fever with Ephedrine.—Ephedrine given by mouth in from 25 to 60 mg. doses afforded temporary relief to slightly more than 50 per cent of the patients with autumnal hay-fever seen by Gaarde and Maytum. An additional 25 per cent obtained sufficient relief to consider its use warranted. Ephedrine given in a 3 per cent solution as a nasal spray is less efficacious and the relief is of shorter duration. However, the majority of patients felt that its use added to their comfort. The best results were obtained when the spray was used early in the paroxysm. The effect of both the local and internal administration seemed to depend on the severity of the paroxysms and the good results were obtained in the milder seizures.

Acnidas as Cause of Hay-Fever and Asthma.—After a study of the hay-fever and asthma problem during the past seven years, Balyeat and Stemen have learned that Western water hemp (*Acnida tamariscina*) is a very important factor in the cause of both hay-fever and asthma in the state of Oklahoma. They suggest to those interested in the study of allergy, who live in the states in which *Acnida tuberculata* is common, that since it is so closely related to *Acnida tamariscina*, botanically, it is, in all probability, a very definite cause of allergic symptoms and should be thoroughly investigated.

Effect of Iodine on Basal Metabolism.—The effects of large doses of iodine on the basal metabolic rate in patients with leukemia, polycythemia, primary anemia, rheumatic fever, simple goiter and hypothyroidism have been studied by Martin. Iodine will lower the basal metabolic rate in clinical conditions other than exophthalmic goiter. The increased metabolic rate of patients with leukemia and polycythemia was not affected by iodine. The high basal metabolic rate of patients with primary anemia and rheumatic fever was lowered as in exophthalmic goiter when iodine was given. Moderate but constant lowering of the basal metabolic rate, from the normal to a subnormal level, was observed when iodine was given to patients with simple goiter showing symptoms of iodine deficiency. Iodine alone will frequently greatly increase the basal metabolic rate in patients with hypothyroidism or myxedema provided they have not previously had iodine or thyroid therapy for several weeks. The mechanism by which the basal metabolic rate is lowered, following the ingestion of large doses of iodine, would seem to be from an acute mechanical blocking of the thyroid secretion. The extent to which iodine will affect the basal metabolic rate in any patient probably depends on the ability of the patient's thyroid to store iodine.

Epidemic Encephalitis.—Sprunt analyzed fifty cases presenting chronic manifestations of epidemic encephalitis. No definite evidence of a constitutional predisposition to nervous or infectious disease was brought out. Mydriasis was noted in nineteen cases and sialorrhea in ten. The basal metabolic rate was not significantly changed. From the standpoint of prognosis, it would seem that at the acute stage of the disease the probability of the development of a parkinsonian syndrome varies with the severity of the symptoms of onset.

Of thirty-five patients followed, one died by suicide, twelve are able to work and twenty-two are chronic invalids. Important points in treatment are rest, freedom from too much responsibility, psychotherapy, the dietetic and hygienic regimen, mechanotherapy and hydrotherapy, and sedative pharmacotherapy, especially the use of scopolamine hydrobromide in the cases presenting the parkinsonian syndrome.

Familial Epistaxis Without Telangiectasia.—The four cases of familial epistaxis without telangiectasis reported by Giffin occurred in both men and women, and the heredity was both maternal and paternal. Although there are not sufficient data with respect to the family histories to prove that the heredity follows the mendelian law, the epistaxis does not appear to be a recessive characteristic. While generalized purpura was not present in any of the cases, petechiae were found in the mouth in one case and purpuric areas in the nose in another. The four cases show one striking feature in common: a somewhat reduced platelet level on repeated counts. All other features of coagulation were essentially normal. In contrast to this, cases of familial epistaxis with telangiectasia have shown a normal platelet level. These facts suggest quite definitely that the condition is not hemophilic, and may be purpuric.

Liver Dysfunction in Migraine.—Thirty-five cases of cephalic and abdominal migraine are reported by Diamond in which tests for liver function were carried out. The tests comprised the van den Bergh reaction of bilirubin in the serum and the urobilinogen in the urine. The results indicate a definite liver disturbance. In 91 per cent of the cases there was a state of latent icterus with a bilirubin retention of from 1 to 5 units. The urobilinogen was also found to be increased from 1 to 35 up to 1 to 200, the highest figures obtaining in cases of high bilirubin retention. These may be classed as hepatic migraine. The inability of the liver to detoxicate putrefactive substances, derived from animal proteins in the intestinal canal, is discussed by Diamond, and an attempt is made to explain the resulting symptoms as an allergic reaction. Also, mention is made of the beneficial results in the treatment by abstinence from animal proteins, changing the intestinal flora, and relief from the spastic constination.

Archives of Ophthalmology, New Rochelle, N. Y.

56: 523-617 (Nov.) 1927

*Anterior Ocular Tuberculosis. G. S. Derby and M. Carvill, Boston.—p. 523.
Case of Detachment of Anterior Layers of Iris. M. J. Schoenberg, New York.—p. 538.
*Treatment of Commoner Syphilitic Lesions of Eye. J. G. Hopkins, New York.—p. 543.
How Primary Glaucoma May Arise from Disturbances in Physicochemical Forces Which Regulate Intra-Ocular Fluid Exchange. J. H. Waite, Boston.—p. 552.
Removal of Lead Shot from Within Eyeball. G. H. Cross, Chester, Pa.—p. 564.
Nutrition of Eye. A. Rados, Newark, N. J.—p. 567.
*Progressive Amaurosis of Retrobulbar Origin: Foreign Protein Treatment. J. Wolff and J. H. Globus, New York.—p. 576.
Ocular Disorders in Deficiency Diseases. F. H. Adler, Philadelphia.—p. 593.

Anterior Ocular Tuberculosis.—Derby and Carvill point out that anterior ocular tuberculosis may be arrested, but it is incorrect to speak of a cure. The average attack of anterior ocular tuberculosis is usually, under proper hygiene, self-limited; that is, the eye tends to recover from that particular attack, leaving a certain amount of injury behind. Sometimes the recovery may take place in two or three months; at times, in eight or ten; again the disease may continue for well over a year. Then, depending on the general resistance of the patient, there is a period of remission; if the resistance is high, this may last for many years, perhaps for the duration of life; if the resistance is not high, the chances are that there will be a recurrence, possibly a mild one, possibly severe. The patient may develop tuberculosis elsewhere in the body. He may die of pulmonary tuberculosis or tuberculosis of some other part. Few eye hospitals are equipped to give these patients adequate antituberculous treatment. Until they are, it is desirable that when possible these patients be sent to sanatoriums for a number of months, not only for the treatment they get there, but also for the knowledge they obtain of the disease and the proper means of combating it. Especially do the authors urge the view that these patients should be regarded as seriously affected with tuberculosis and treated not only to cure the present attack but to avoid recurrences, and so to build up their resistance that they will have a reasonable certainty of avoiding a more serious form of tuberculosis later on.

Treatment of Syphilitic Iritis.—Hopkins asserts that patients with iritis occurring in the secondary stage should be treated intensively with neoarsphenamine, bismuth and mercury for two years. The governing consideration in their treatment should be not the healing of the eye lesions but the clearing up of the general syphilitic infection. Patients with interstitial keratitis or tertiary iritis should be treated with the same drugs, and should also receive iodides. Continuous intensive treatment should be carried on for a year, and continuous or intermittent treatment for two years more.

Progressive Amaurosis of Retrobulbar Origin.—Each of the three cases reported by Wolff and Globus was characterized by an insidious onset of progressive loss of vision; in each case central scotomas developed in the course of the the disease, which widened progressively and led to almost complete loss of vision; in each case there were visual field changes in the nature of hemianopsic disturbances. In none of the three cases were there signs of a localizable, expansile, intracranial lesion. None of the cases showed evidence of increased intracranial pressure, and in all the three cases there was failure to react to any form of treatment except typhoid vaccine injections, the latter bringing about complete or almost complete restoration of vision.

Archives of Surgery, Chicago

15: 667-828 (Nov.) 1927

*Subungual Melanoma: Hutchinson's Melanotic Whitlow. N. A. Womack, St. Louis.—p. 667.
*Cysts of Semilunar Cartilages of Knee. I. Zadek and H. L. Jaffe, New York.—p. 677.
*Acute Traumatic Ulcers of Small Intestine. W. J. Gallagher, Chicago.—p. 689.
Fate of Foreign Bodies in Venous Circulation. H. J. Warthen, Jr., Richmond, Va.—p. 712.
Operations of Necessity During Pregnancy. R. D. Mussey and J. F. Crane, Rochester, Minn.—p. 729.
Treatment of Infection. A. O. Wilensky, New York.—p. 737.
Chemistry of Stomach Contents Following Gastric Operations. M. E. Steinberg, J. C. Brougher and I. J. Vidgoff, Portland, Ore.—p. 749.
*Experimental Shock: I. Shock Following Hemorrhage. A. Blalock, Nashville, Tenn.—p. 762.
Review of Urologic Surgery. A. J. Scholl, Los Angeles, and others.—p. 799.

Subungual Melanoma.—Womack adds four cases to the twenty-one already on record. Fifteen per cent of all melanomas at the Barnes Hospital were found to be subungual. These tumors are probably of epithelial origin. Pigmented ulceration occurring in the nail-bed of a patient above the age of 40 is a frequent occurrence. Early amputation of the phalanx with dissection of the regional lymph node is advised.

Cyst of Semilunar Cartilages of Knee.—Zadek and Jaffe report a case of cysts of the internal semilunar cartilage in a young man, in whom the condition became apparent several weeks after he had wrenched the knee. This is the third reported case of cysts of the internal meniscus. The authors believe that the cysts are probably congenital in origin. Trauma is present in about half the cases, and it is only an initiating factor which leads to a rapid filling up of the preformed cysts with secretion.

Acute Traumatic Ulcers of Small Intestine.—From the experiments made by Gallagher, it appears clear that in dogs mechanical pressure on the duodenum and the jejunum sufficient to stop the flow of blood in the compressed part for about thirty minutes induces typical acute ulcers, which on healing leave typical scars.

Treatment of Shock Following Hemorrhage.—The following procedures are suggested by Blalock as a tentative routine treatment of any hemorrhage of significant magnitude. As soon as the patient is seen and the hemorrhage is controlled, he should be given from 65 to 130 mg. (1 to 2 grains) of ephedrine subcutaneously. Intravenous saline infusion

should be instituted as soon as possible, and relatively large amounts should be given. Provided there is no structural cardiac disease or preexisting hypertension of severe degree, and the patient is under 60 years of age, the heart will be able to take care of any reasonable amount of fluid added to the circulation. During the first hour, 1 liter of saline solution should be given intravenously. Thereafter, subcutaneous infusion should be employed until transfusion can be carried out. As soon as the saline infusion has been begun, the preliminary measures (procuring a donor and matching the blood) for transfusion should be instituted. If the patient's condition appears relieved, transfusion may not be necessary. If marked tachycardia persists, and more particularly if the systolic blood pressure is below 100 to 110, the transfusion should be performed. If, after the conclusion of transfusion, the patient's condition remains precarious, the whole process should be repeated. When the hemorrhage is from an internal organ and an operation is necessary, general anesthesia should not be used. The present work indicates that ether is dangerous. Clinical experience and the experimental results agree in indicating that local anesthesia should be employed for operations on patients who have bled profusely.

Arkansas Medical Society Journal, Little Rock

24: 113-132 (Nov.) 1927

Pituitary Extract in Obstetrics. E. H. White, Little Rock.—p. **113.**
Injuries of Biliary Tract. T. F. Kittrell, Texarkana.—p. 117.

California and Western Medicine, San Francisco

27: 593-736 (Nov.) 1927

Epidemic Encephalitis. W. L. Bender, San Francisco.—p. 625.
*Effect of Lead on Normal and Malignant Tissues. F. R. Nuzum, R. D. Evans and H. J. Ullmann, Santa Barbara.—p. 629.
Traumatic Thrombosis of Upper Extremities. J. K. Swindt, Pomona.—p. 635.
Vision in Relation to Industry. E. M. Neher, Salt Lake City.—p. 638.
Rheumatic Endocarditis in Children. A. J. Scott, Los Angeles.—p. 641.
Conservation of Hearing and Hard of Hearing Child. F. S. Rodin, San Francisco.—p. 643.
Environment During Pregnancy. J. M. Slemons, Los Angeles.—p. 648.
*Juvenile Acne: Treatment. E. D. Chipman, San Francisco.—p. 650.
*Metallic Tinkles in Pneumothorax. A. O. Sanders, Livermore.—p. 653.
Tonsillectomy with Nitrous Oxide-Oxygen Anesthesia. M. Price, San Francisco.—p. 656.
Lure of Medical History: Vesalius. J. Oliver, San Francisco.—p. 657.
Remission in Sprue Following High Liver Diet. A. L. Bloomfield and H. A. Wyckoff, San Francisco.—p. 659.

Effect of Lead on Tissues.—In a series of seven cases in which all available means of combating the disease have been employed, including blood transfusion, roentgen-ray and radium therapy, marked regressive changes were noted by Nuzum et al. in certain of the tumors which had been treated by intravenous preparations of colloidal lead. Fatty changes of the liver, cloudy swelling of the cells lining the convoluted tubules of the kidneys, and blood destruction were changes fairly constantly associated with the use of colloidal metallic lead. These observations bear out the statement of Glynn that there is nothing histologically pathognomonic of the effect of lead on tumor cells, but that the naturally occurring regressive changes are intensified.

Treatment of Juvenile Acne.—Besides treating existing constipation and anemia, and curtailing the use of sweets, if necessary, Chipman removes as much of the surface detritus as is possible by the use of strongly alkaline soaps and the application of active keratolytics. Nothing surpasses a good laundry soap, but green soap or its tincture may be used. In conjunction with this, cold water improves the tone of the skin. The initial treatment consists usually of incision of pustules. This is most easily accomplished by means of a special acne lance of some description. Chipman's preference is an ophthalmologic instrument, the irridectomy knife. Some of the more pronounced comedones are extracted. Epithelial detritus is removed by the use of a 10 to 15 per cent resorcin paste, applied nightly for one week or more. If the keratolytic action of the resorcin is now judged to be sufficient, a mild sulphur lotion is substituted; if not, the resorcin is continued. The fundamental cause, which is an excessive activity of the sebaceous glands, is attacked by the roentgen ray, which by its selective action on the sebaceous glands reduces their size and functional activity. If there is no excessive secretion or faulty distribution of the sebaceous secretion there are no comedones; if there are no comedones there is no acne.

Metallic Tinkles in Pneumothorax.—According to observations made by Sanders in forty-four cases of pneumothorax, the metallic tinkle in pneumothorax is not confined to those cases showing open bronchus and effusion. Metallic tinkles were heard in cases of induced pneumothorax in which there was neither fluid nor open bronchus. It would also appear that metallic tinkles may be produced by sounds arising from distinctly varied sources.

Florida Medical Association Journal, Jacksonville

14: 211-258 (Nov.) 1927

Caudal Block Anesthesia: 114 Cases. L. F. Robinson, Fort Lauderdale.—p. 211.
Roentgenologic Examination of Upper Abdomen. F. K. Herpel, West Palm Beach.—p. 229.
Congenital Amyotonia: Two Cases. C. C. Rudolph, St. Petersburg.—p. 234.
Treatment of Inoperable Rectal Cancer by Extraction of Heat with Carbon Dioxide Snow. J. Halton, Sarasota.—p. 237.
Vincent's Angina: Case. J. A. Mease, Jr., Dunedin.—p. 239.
Intravenous Treatment of Malaria with Quinine. N. L. Spengler, Tampa.—p. 241.
Mastoid Case with Fatal Termination. J. R. Simpson, Miami.—p. 244.

Georgia Medical Association Journal, Atlanta

16: 365-400 (Nov.) 1927

Radiologic Interpretation of Bone Tumors. L. D. Parry, Thomasville.—p. 365.
Diagnosis of Syphilitic Bone Lesions. J. J. Clark, Atlanta.—p. 369.
Necessity of Pyelograms in Urologic Diagnosis. W. L. Bazemore, Macon.—p. 373.
Skin Cancer: Diagnosis and Treatment. W. H. Hailey, Atlanta.—p. 376.

Illinois Medical Journal, Oak Park

52: 345-428 (Nov.) 1927

Public Health Activities of Medical Society of State of New York. J. E. Sadlier, Poughkeepsie, N. Y.—p. 359.
Diagnosis and Treatment of Bladder Tumors. B. C. Corbus, Chicago.—p. 365.
Results in Treatment of Cancer of Bladder. V. J. O'Conor, Chicago.—p. 369.
Phrenectomy. R. B. Bettman, Chicago.—p. 374.
Healing of Peptic Ulcer. K. L. Thorsgaard, Chicago.—p. 377.
Subtotal Resection of Tibia Replaced by Fibula. J. R. Harger, Chicago.—p. 381.
Conservative Treatment of Hemorrhoids. W. A. Hinckle, Peoria.—p. 387.
Exostoses of Bones of Foot. A. P. Heineck, Chicago.—p. 388.
*Muscle-Strain Precipitating Pneumococcus Cellulitis of Shoulder Girdle, from Respiratory Infection. O. W. Tulisalo, Rockford.—p. 392.
Action of Parathormone. W. C. Hueper, Chicago.—p. 393.
Neuroinidia. J. H. Dowd, Buffalo.—p. 396.
Surgery in Budapest, Hungary. M. H. Hobart, Evanston.—p. 399.
Early Days and Experiences in Psychiatry—1870-1900. R. Dewey, Pasadena, Calif.—p. 402.
Fundamentals in Feeding of Underweight Children. L. W. Sauer, Evanston.—p. 406.
*Diathermy in Urology. C. O. Ritch, Chicago.—p. 409.
Routine Examination of Hip, Shoulder, Elbow and Wrist. P. Lewin, Chicago.—p. 411.
Lactic Acid Milk in Infant Feeding. G. J. Tygett, Chicago.—p. 412.
*Vivisection of Capital Criminals for Advancement of Knowledge in Medicine. E. Podolsky, New York.—p. 414.

Pneumococcus Abscess of Muscle Following Trauma.—Tulisalo's patient cranked a boat-motor until the muscles of his right shoulder and arm were strained (such areas of muscle have very sluggish and poor circulation). Then he contracted influenza with a pneumococcus bacteremia (the bacteremia having cleared up before the culture of the blood was taken). The pneumococci found a favorable medium and incubating place in the injured muscle, where they proceeded to grow, finally producing an abscess, or cellulitis.

Diathermy in Urology.—In Ritch's opinion, medical diathermy is of extreme importance to the urologist in the treatment of gonorrheal arthritis and acute epididymitis.

Vivisection of Capital Criminals.—Podolsky contends that the establishment of the vivisection of capital criminals as an institution must eagerly be looked toward, for with such an advent, a most glorious era in medicine will be ushered in, and with it an almost certain solution of the many problems of human health and happiness.

Indiana State M. Association Journal, Fort Wayne

20: 419-450 (Nov.) 1927

Infant Feeding—Present Status. J. H. Hess, Chicago.—p. 419.
Diuretics in Treatment of Cardiovascular and Renal Disease. H. A. Christian, Boston.—p. 422.
Prevention in Some Types of Mental Sickness. R. M. Funkhouser, Indianapolis.—p. 427.
Physical Therapeutics. E. N. Kime, Indianapolis.—p. 432.

Kansas Medical Society Journal, Topeka

27: 359-394 (Nov.) 1927

Dermatologic Considerations of Interest. A. Schalek, Omaha.—p. 359.
Surgical Treatment of Atypical Hypertrophied Prostate with Prostatic Calculi. J. L. Grove, Newton.—p. 361.
Megalogastrica: Chronic Pyloric Obstruction. F. A. Trump, Ottawa.—p. 363.
Physical Therapy a Specialty. J. T. Scott, St. John.—p. 364.
Vomiting of Pregnancy. H. E. Marchbanks, Pittsburgh.—p. 368.
Trench Mouth and Antitoxin. G. W. Davis, Ottawa.—p. 374.

Michigan State M. Society Journal, Grand Rapids

26: 645-702 (Nov.) 1927

Substitute Operations for Enucleation of Eyeball: Autogenous Cartilage Transplant. W. T. Garretson, Detroit.—p. 645.
Health Findings in Children of School Age—2,989 Examinations. D. S. Brachman and E. J. Hall, Detroit.—p. 649.
Hydronephrosis: Case. G. C. Burr, Detroit.—p. 654.
Behavior of Children in Relation to Medical Treatment. H. T. Clay, Grand Rapids.—p. 655.
Conservation in Surgery of Benign Bone Tumor. C. W. Peabody, Detroit.—p. 660.
Undulant Fever in Man: Relation to Bovine Infectious Abortion. I. F. Huddleson, Lansing.—p. 664.
Sterility in Female. E. D. Rothman, Detroit.—p. 666.
Comparative Vitamin Content of Human and Cow's Milk. I. G. Macy, Detroit.—p. 669.
Should Extraction of Teeth End Search in Jaws. M. N. Frank, Detroit.—p. 671.
Gynecologic Bleeding. B. Friedlaender, Detroit.—p. 673.
Lord Lister's Influence on Modern Surgery. G. B. Ohmart, Detroit.—p. 679.
Diphtheria in Aged: Case. H. A. Aach, Kalamazoo.—p. 681.

Military Surgeon, Washington, D. C.

61: 549-684 (Nov.) 1927

Military Delinquency: Garrison Prisoner. E. King.—p. 549.
Protein Hypersensitiveness. W. A. Smith.—p. 560.
Field Service. J. W. Grissinger.—p. 581.
Tactics of Medical Service with Cavalry Regiment. L. L. Gardner.—p. 598.
United States Army Ration. F. E. Gessner.—p. 610.
Personal Recollections of Old Medical Officers. G. M. Kober.—p. 635.

Minnesota Medicine, St. Paul

10: 665-718 (Nov.) 1927

Present Trend of Gynecology. J. O. Polak, New York.—p. 665.
Cervix as Focus in Chronic Disease. C. H. Mayo and C. F. Dixon, Rochester.—p. 671.
Cancer of Uterus: Opportunity of Family Physician in Its Control. J. C. Litzenberg, Minneapolis.—p. 674.
Control of Pylorus. C. B. Wright and G. Medes, Minneapolis.—p. 678.
Evaluation of Roentgen-Ray Gastro-Intestinal Report. P. M. Hickey, Ann Arbor, Mich.—p. 682.
Principles of Gastric Surgery. D. C. Balfour, Rochester, Minn.—p. 685.
Treatment of Chronic Ulcerative Colitis. J. A. Bargen, Rochester, Minn.—p. 689.
Peptic Ulcer. J. B. Carey, Minneapolis.—p. 695.
Rectal Fistula in Tuberculous. W. A. Fansler and C. K. Petter, Oak Terrace.—p. 698.

Ohio State Medical Journal, Columbus

23: 879-958 (Nov.) 1927

Uterine Fibroids. C. J. Miller, New Orleans.—p. 899.
Thyroid. A. B. Brower, Dayton.—p. 907.
Diagnostic Significance of Hematuria. C. E. Jelm, Akron.—p. 911.
Sympathetic Ophthalmia: Two Cases. C. Lukens, Toledo.—p. 915.
Epidemic of Typhoid: Milk-Borne Infection. I. C. Riggin, Portsmouth, Va.—p. 919.
Pin Removed from Child's Intestines. A. H. Potter, Springfield.—p. 921.

Physical Therapeutics, Baltimore

45: 457-502 (Oct.) 1927

Medical Profession and Physical Therapy. C. Pope, Louisville, Ky.—p. 457.
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Intensive Methods of Applying Heat for Relief of Pain and Other Therapeutic Effects. J. H. Kellogg, Battle Creek, Mich.—p. 472.
Physical Therapy in Europe. R. Kovacs, New York.—p. 481.

Rhode Island Medical Journal, Providence

10: 159-172 (Nov.) 1927

Treatment of Epilepsy of Childhood by Ketogenic Diet. F. B. Talbot, Boston.—p. 159.
Cancer of Cervix. H. C. Pitts, Providence.—p. 163.
Prenatal Problems. P. Appleton, Providence.—p. 165.

Tennessee State M. Association Journal, Nashville

20: 233-272 (Nov.) 1927

Pellagra: Infection or Due to Diet? J. L. Jelks, Memphis.—p. 233.
Fractures of Shaft of Femur. H. G. Hill and J. Penn, Memphis.—p. 240.
Paranasal Sinus Disease as Etiologic Factor in Intestinal Disease of Adult. R. Harris, Memphis.—p. 244.
Insanity: Prevention. H. E. Goetz, Knoxville.—p. 247.
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Texas State Journal of Medicine, Fort Worth

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Phenomena Produced by Pulmonary Tuberculosis. C. M. Hendricks, El Paso.—p. 459.
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Pregnancy as Complication of Pulmonary Tuberculosis. G. Bethel, Austin.—p. 465.
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United States Vet. Bur. M. Bull., Washington, D. C.

3: 1089-1191 (Nov.) 1927

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Pulsus Alternans. R. S. Morris.—p. 1114.
Colostomy. L. E. Briscoe.—p. 1118.
Gastrojejunocolic Fistula: Case Report. L. A. Bradbury.—p. 1120.
Comparison of Physical and Roentgen-Ray Examinations. B. L. Talbot.—p. 1127.
Pulmonary Tuberculosis. V. E. Bellinger.—p. 1133.
Vincent's Angina. R. M. Fulwider.—p. 1135.
Focal Infection of Dental Origin in Cases of Dementia Praecox—Hebephrenic Type. L. B. Hodges.—p. 1139.
Postoperative Collapse of Lung Following Nephrectomy with Complete Recovery. G. P. Asper.—p. 1143.
Tuberculosis of Anterior Mediastinal Lymph Nodes. R. C. Buckley.—p. 1148.
Nurses in Neuropsychiatric Hospital. F. J. Pelton.—p. 1160.
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Virginia Medical Monthly, Richmond

54: 471-538 (Nov.) 1927

Medical Profession of Virginia. J. S. Horsley, Richmond.—p. 471.
*Calculus in Bladder. L. T. Price, Richmond.—p. 476.
*Treatment of Common Cold. C. Edmond, Clifton Forge.—p. 477.
Spirit of Research as Typified by Walter Reed. L. T. Royster, University.—p. 479.
Abdominal Pain from Neurologic Point of View. R. F. Gayle, Jr., Richmond.—p. 483.
Management of Benign Prostatic Hypertrophy. C. P. Howze, Danville.—p. 486.
Infant Feeding. W. B. McIlwaine, Petersburg.—p. 489.
Acute Tetanus: Case. A. F. Giesen, Brownsburg.—p. 492.
Infant Mortality Study. E. Gardner, Richmond.—p. 494.
Malnutrition of Childhood. W. A. McGee, Richmond.—p. 497.

Calculi in Bladder.—Price removed thirty-seven stones from the bladder of a woman, aged 48. The mass of stones weighed 94.5 Gm. A chemical analysis of several of the stones showed their composition to be calcium phosphate.

Treatment of Common Cold.—To treat a coryza, Edmond applies a solution of mild silver protein to the mucous membrane of both nasal fossae. About 20 grains (1.3 Gm.) of mild silver protein crystals is added to about 2 drachms (7.5 cc.) of water, and stirred with a wooden applicator until a dark brown color develops. It seems unnecessary to use

a solution of definite percentage strength, but it should be freshly made. It is of importance to coat the mucous membrane thoroughly, after which a new swab carries a small quantity of a liquid petrolatum preparation to just within the nostrils. The menthol-camphor flavor is always well received by the patient and constitutes a somewhat pleasant termination to an otherwise not entirely agreeable experience. This step is useful, also, in wiping away any excess of mild silver protein which may be inclined to drip from the nose.

West Virginia Medical Journal, Charleston, W. Va.

23: 557-608 (Nov.) 1927

Treatment of Peptic Ulcers. J. S. Horsley, Richmond, Va.—p. 557.
Responsibility of Medical Profession in Public Health Organization. J. E. Monger, Columbus, Ohio.—p. 562.
Carcinoma of Stomach. J. Sailor, Philadelphia.—p. 571.
Unsolved Problem. C. H. Maxwell, Morgantown.—p. 577.
Intracapsular Cataract. C. M. Hawes, Huntington.—p. 587.
Whose Business Is It? W. E. Whiteside, Parsons.—p. 589.
Latest Tear Duct Operation. A. L. Coyle, Wheeling.—p. 590.

Wisconsin Medical Journal, Milwaukee

26: 547-600 (Nov.) 1927

Cancer: Treatment. K. W. Doege, Marshfield.—p. 547.
Urinary Tract: Accident Surgery. J. C. Sargent, Milwaukee.—p. 551.
Ultraviolet Light and Nutritional Disturbances. G. J. Warnshuis, Milwaukee.—p. 555.
Abscess of Frontal Lobe Complicating Frontal Sinusitis: Case. W. S. Middleton, Madison.—p. 556.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Surgery, Bristol

15: 177-248 (Oct.) 1927

Secondary Deposits in Bone Following Carcinoma of Breast: Eighteen Cases. D. H. Patey.—p. 182.
*New Operation on Drop-Foot. C. Lambrinudi.—p. 193.
Fractures of Upper End of Femur. G. F. Stebbing.—p. 201.
Case of Neurocytoma of Suprarenal. M. Davidson and E. W. Hurst.—p. 216.
*Types of Gallbladder Infection. C. F. W. Illingworth.—p. 221.
*Incontinence of Urine of Renal Origin. R. C. Begg.—p. 229.
*Relation of Tuberculosis to Köhler's Disease. H. H. Greenwood.—p. 245.
*Rapid Microscopic Diagnosis of Tumors. L. S. Dudgeon and C. V. Patrick.—p. 250.
*Ruptured Urethra: Treatment. H. Banks.—p. 262.
Vesical Tumors Resembling Endometrioma. A. C. Morson.—p. 264.
Volvulus of Small Intestine, Cecum and Ascending Colon, Associated with Congenital Reversed Rotation of Intestine and with Pregnancy. C. Donald.—p. 269.
Injuries of Semilunar Cartilages. C. H. Fagge.—p. 273.
Accessory Breasts in Labia Majora. R. Purves and J. A. Hadley.—p. 279.
*Glucose Enema: Value in Postoperative Treatment. D. Levi.—p. 282.
*Periarterial Sympathectomy with Ligature of Femoral Vein in Diabetic Gangrene. R. Brooke.—p. 286.
Structure and Origin of "Mixed" Tumors of Salivary Glands. R. M. Fry.—p. 291.
Urethral and Periurethral Calculi. G. P. B. Huddy.—p. 307.
*Complete Gastrectomy for Chronic Ulcer: Effect of Loss of Stomach on Physiology of Digestion in Man. H. B. Butler.—p. 316.
*Recurrence of Carcinoma of Stomach Eighteen Years After Partial Gastrectomy. E. P. Gould.—p. 325.
Late Result in Ectopia Vesicae. F. N. G. Starr.—p. 328.
Case of Obstruction Due to Meckel's Diverticulum. C. M. Finny.—p. 329.
Perforation of Meckel's Diverticulum. J. A. Berry.—p. 331.
Case of Diaphragmatic Hernia. R. F. Jowers.—p. 332.
Double Gallbladder Removed by Operation. C. P. G. Wakeley.—p. 334.
Case of Umbilical Hernia in Infant. E. C. Bowden.—p. 337.

Operation for Drop-Foot.—Only one joint is arthrodesed in Lambrinudi's operation—the subastragaloid. A portion of bone is removed from the astragalus and the scaphoid. The tip of the former is locked in the created notch in the latter. This operation can control a drop-foot even though the gastrocnemius is active and powerful. It permits of a certain range of movement at the ankle joint, enabling the gastrocnemius to come into action during an important phase of the step forward, and at the same time keeps the foot up sufficiently for it to clear the ground.

Gallbladder Infection.—The most interesting point which emerges from Illingworth's study is the comparatively frequent occurrence of a purely intramural streptococcal infection. The evidence tends strongly to corroborate the opinion that spread of the organisms via the bile, either from the liver or from below, is not the usual route, and, indeed, probably occurs only rarely, if at all.

Incontinence of Urine of Renal Origin.—Begg describes a rare type of urinary incontinence caused by an aberrant ureter opening into the urethra or the vestibule of the vagina. The cardinal symptom is incontinence side by side with normal urinary function. The abnormality is explicable only by presupposing that the wolffian ducts enter into the formation of the female urethra and vestibule. Usually, the abnormal ureter is one component of a double ureter, so that cystoscopy reveals two normal ureters in the bladder. The ureter is generally dilated and infected, and belongs to a kidney which is diseased and has little function. The usual treatment should be nephrectomy or partial nephrectomy, but in clean cases ligature of the ureter may suffice. If the kidney is performing a large share of the renal function, the aberrent ureter should be implanted into the bladder by high operation.

Relation of Tuberculosis to Köhler's Disease.—Greenwood is convinced that the disease is due to a blood-borne infection of low pathogenicity—in his case, the pneumococcus—followed later by *Staphylococcus aureus.* The supervention of tuberculosis, which rendered amputation necessary, finds its parallel in the lungs, where *Bacillus tuberculosis* not infrequently follows the pneumococcus. It may be that the infection was, from the onset, a dual one, *Bacillus tuberculosis* becoming dominant only in the later stages. The term "tarsal scaphoiditis" is in accordance with the known pathologic manifestations of the disease. The term "Köhler's disease" had been applied to an early and abortive infection of the tarsal scaphoid by *Bacillus tuberculosis.*

Rapid Microscopic Diagnosis of Tumors.—A wet-film method of tissue examination is described by Dudgeon and Patrick. The tumor or other tissue is cut into, and the freshly cut surface scraped firmly with a sharp scalpel. The milky juice so obtained is spread evenly on slides, and put immediately into Schaudinn's fluid while still wet. The composition of this fluid is as follows: (1) Saturated solution of mercuric chloride in distilled water, 2 parts; (2) absolute alcohol, 1 part. A few drops of glacial acetic acid are added so as to obtain 4 per cent of the acid in the solution. The wet films are allowed to remain in this fluid from two to ten minutes according to circumstances. If rapidity is essential, then an absolute minimum time of two minutes can be employed, but the best preparations are obtained by fixation for ten minutes. The films are afterward washed in spirit, and then in distilled water. Mayer's hemalum is employed as the nuclear stain, and eosin as the counterstain. Dehydration and clearing are done with absolute alcohol and xylene, and the films are then coverslipped with Canada balsam. Two hundred patients have been so examined, and 191 correct diagnoses returned.

Treatment of Ruptured Urethra.—Suprapubic cystotomy is done by Banks, and a fully curved metal prostatic catheter is passed through the internal meatus along the urethra to the seat of rupture. Another fully curved metal catheter is passed through the external meatus along the urethra until it comes in contact with the first. The two catheters are then taken one in each hand and gently manipulated until their beaks lie in contact with one another, end to end. By gently withdrawing the first catheter and pushing the second one farther in, keeping the beaks in contact, it is possible to guide the second catheter past the seat of the rupture and into the bladder. No force is required. The second catheter is made to protrude through the suprapubic opening, and a self-retaining rubber catheter is attached to it by means of a silk thread. The metal catheter is then withdrawn from the external meatus and in this way the self-retaining catheter is drawn into place past the rupture. The opening in the bladder is closed and a small drain placed in the space of Retzius. At the end of ten days, the self-retaining catheter is removed.

Value of Dextrose Enema.—Experiments made by Levi show that the rectum and colon vary in their power of absorb-

ing dextrose in different subjects; on the whole, the rate of absorption is slow, and very little sugar can, apparently, be introduced into the body by this route. From the practical point of view, dextrose given rectally would appear to be of little value as a means of maintaining bodily nutrition. Finally, individuals, the subjects of postoperative shock, are in a state of hyperglycemia and seem to be unable to utilize sugar normally, although their tissues are bathed in a fluid containing an excess of this substance. A dextrose saline solution given rectally under such circumstances is not only useless, but also actively harmful, as it would appear that the absorption of fluid from the bowel is actively hindered by the presence of dextrose. The obvious sequence to these investigations seems to be the administration of insulin to patients in the condition of postoperative shock.

Periarterial Sympathectomy in Diabetic Gangrene.—Some cases of diabetic gangrene are too rapid in their course for surgical measures to be attempted. In those cases which are suitable for operative treatment, the following method has given Brooke good results: A short preliminary course of insulin therapy to render the patient more fit to stand the operation to follow; local treatment in the form of radiant-heat baths, and early operation. The operation of choice was a combined method of periarterial sympathectomy of the femoral artery in Hunter's canal, with ligation of the femoral vein. After an interval of from five to ten days, a low amputation is made.

Complete Gastrectomy for Chronic Ulcer.—Butler removed the whole stomach, and made an anastomosis between the esophagus and the nearest convenient loop of jejunum. The patient not only survived the operation but was apparently in good health five months later. As to whether any part of the intestine has altered its function so as to become a new stomach, Butler says that the portion of the jejunum immediately below the anastomosis with the esophagus had to some extent done this. There is a decided dilatation which contains a quantity of barium for an appreciable time, and there is a false gastric fundus, developed from the jejunum, which performs the duty of the real gastric fundus in accommodating a large bubble of swallowed air during the time when the "new stomach" is full of food. A jejunocolic reflex has not taken the place of a gastrocolic reflex, but taking food into the jejunum sets up a very brisk reaction in the lower iliac coils, corresponding with the normal gastro-ileal reflex of Hurst and Newton. Food which had remained in these coils practically motionless for seven hours was immediately passed on into the cecum and ascending colon when more food was taken. So far as the actual digestion of food is concerned, the patient did not appear to have any difficulty with either starch or muscle, but fat was in excess in the stools, though not to any serious degree. As it was almost all in the form of split fat, it was not likely to be due to pancreatic inefficiency.

Recurrence of Gastric Cancer After Partial Gastrectomy.—The chief interest of Gould's case lies not only in the remarkable prolongation of healthy life which resulted from the operation performed in the early days of partial excision of the stomach, but also in the suggested value of an efficient gastrojejunostomy in lessening the pain usually associated with a rapidly advancing gastric carcinoma.

British Medical Journal, London

2: 713-766 (Oct. 22) 1927

Harveian Oration on Gilbert, Bacon and Harvey. W. Hale-White.—p. 713.
*Tobacco Habit. W. E. Dixon.—p. 719.
Roentgen Rays in Diagnosis of Intrathoracic Growths. S. Melville.—p. 725.
Roentgen Rays and Radium in Treatment of Carcinoma of Breast. N. S. Finzi.—p. 728.
Chronic Fibrous Epiploitis. A. C. Maconie.—p. 733.
Death After Anesthesia: Status Lymphaticus. J. Acomb.—p. 734.
Cholecystitis with Associated Pancreatitis. P. Brinckman.—p. 734.

Effect of Tobacco.—Dixon summarizes his paper as follows: Tobacco smoking serves as a mild stimulant followed by a slight degree of narcosis. The supersensitive become calm and lose their irritability, and the dull and apathetic are stimulated. The physiologic evidence clearly points to this effect, but the explanation has yet to be learned. Smoking, however, leads to digestive and circulatory disturbances. There is an increasing impression among clinicians that the insidious action of nicotine spread over many years of continuous absorption is responsible for at least some of the cardiovascular diseases so common in middle and later life. To what extent strict moderation in the use of tobacco leads to vascular degeneration is uncertain.

2: 767-810 (Oct. 29) 1927

Comparative Medicine: Cooperation Between Specialists in Human and Animal Diseases. J. B. Buxton.—p. 767.
Treatment of Toxic Goiter: I. Place of Surgery. T. P. Dunhill.—p. 771.
Id.: II. Indications for Surgical Treatment. G. R. Murray.—p. 774.
*Therapeutic Uses of Calcium Salts: I. F. R. Fraser.—p. 777.
*Id.: II. Effect of Calcium in Children. L. G. Parsons.—p. 780.
Id: III. Biochemical Aspect of Calcium Therapy. C. P. Stewart.—p. 782.
*Id.: IV. Pharmacologic and Therapeutic Aspect. G. H. Percival.—p. 783.
*Convulsions Caused by Pituitary Extract After Labor. R. D. Lawrence and M. P. Shackle.—p. 786.
Inversion of Uterus. J. G. Hayes.—p. 786.
Compound Fracture of Humerus: Spontaneous Repair. C. R. Steel.—p. 786.
*"Rising Test" for Acute Abdomen. C. L. G. Chapman.—p. 786.
Congenital Occlusion of Small Intestine. S. E. Croskery.—p. 787.

Therapeutic Uses of Calcium Salts.—Fraser stresses the fact that disturbances in the specific functions of calcium due to insufficiency are merely symptomatic of abnormalities that may be far reaching in their consequences and remote in their causation, while any attempt to influence the specific functions by increasing the concentration of calcium above the normal may have effects on important constituents of the body and on remote functions.

Effect of Calcium in Children.—In Parsons' opinion, the field of usefulness of calcium salts is restricted to the treatment of tetany and deficient calcification of bone, and he believes that even in these conditions other therapeutic measures are essential to the production of a satisfactory calcium effect. He does not think it is necessary to give calcium salts medicinally in order to produce calcification of bone, because if the diet of a young child is efficient, it will contain sufficient calcium to supply the body requirements if only the absorption is normal.

Field of Calcium Therapy.—Percival states that derangements of calcium metabolism are confined to a very small number of pathologic conditions, and that, with a possible exception in the case of pregnancy, such derangements are almost always due to a deficiency in some part of the controlling mechanism. For this reason, calcium therapy appears to have a very limited field; moreover, in those instances in which it has proved useful, the effects are merely palliative, and may be better achieved by other means.

Pituitary Extract Causes Convulsions.—Following the intramuscular injection of 10 units of pituitary extract four days after delivery, because the uterus was lax, the patient, who had diabetes, went into profound shock. The course of the diabetes in this patient suggested a hyperactive pituitary, and the bitemporal constriction of the fields of vision suggested the same thing, although no definite acromegalic symptoms were present. Lawrence and Shackle feel that the severity of the symptoms experienced after the pituitary extract was taken may therefore be due to an overactive pituitary gland.

"Rising" Test in Acute Abdominal Diseases.—Chapman uses a test which has proved exceedingly useful, more especially in borderline cases, which consist chiefly of appendicitis, in which one might reasonably be persuaded to put off operation, perhaps until the next day or so. The "rising test" consists in the patient putting both hands down by the side of the thighs and then raising himself in bed by means of the abdominal muscles. This produces pain immediately, and the patient fails to raise himself or complains of pain in doing so. This test will prove positive when there is little or no tenderness in the abdomen. The test is a sign of an acute abdominal condition, not necessarily appendicitis, and applies equally well in any acute abdominal lesion.

Journal of Pathology & Bacteriology, Edinburgh

30: 577-747 (Oct.) 1927

Healed Tuberculoma of Cerebellum. M. J. Stewart.—p. 577.
Large Calcified Tuberculoma of Cerebrum with Independent Terminal Cerebral Hemorrhage. R. P. Smith.—p. 583.
Diphtheria Toxoid-Antitoxin Floccules. A. T. Glenny and C. G. Pope.—p. 587.
Three Different Classifications of Dysentery Bacilli: English, German and Japanese. D. Kalic.—p. 593.
Tumors of Rabbit. C. J. Polson.—p. 603.
Effects of Coal Dust on Silicotic Lung. S. L. Cummins.—p. 615.
Activity of Thyroid in Relation to Staining Reactions of Colloid. E. E. Hewer.—p. 621.
*Agglutination of Typhoid and Dysentery Organisms by Serums of Mental Hospital Patients. F. A. Pickworth.—p. 627.
Hypernephroma of Atypical Structure. J. Gray.—p. 651.
Thrombo-Angiitis Obliterans. R. O. Girdwood.—p. 643.
Production of Experimental Atheroma with Cholesterol. R. W. Scarff.—p. 647.
Exotoxins of Hemolytic Streptococci. J. Smith.—p. 651.
Stability and Solubility of Diphtheria Toxin in Acid and Alkali. U. Wallace.—p. 667.
Complement Fixation in Mixtures of Toxin and Antitoxin. H. R. Dean.—p. 675.
Monocytes of Rabbit in B. Monocytogenes Infection. L. J. Witts and R. A. Webb.—p. 687.
Regeneration of Pancreas. G. R. Cameron.—p. 713.
Preparation of Mucicarmine. H. W. Southgate.—p. 729.

Agglutination of Typhoid and Dysentery Bacilli in Mental Cases.—The agglutination response to typhoid-paratyphoid vaccination has been examined by Pickworth in 100 cases of mental disorder. About one fourth of the patients gave positive agglutination reactions with pathogenic organisms of the coli-typhoid group. It is suggested that these indicate past or chronic infections of importance in the causation of mental disorders.

Kenya & East African M. Journal, Nairobi

4: 195-430 (Oct.) 1927

*Treatment of Bubonic Plague with Iodine, Camphor and Thymol. J. A. Carman.—p. 196.
Dextrocardia in Indian Boy: Case. P. P. D. Connolly.—p. 200.
Tana River Yaws Campaign. T. D. Nair.—p. 201.
Helminthic Infections Among Some Coast Natives. C. R. Philip.—p. 207.

Treatment of Bubonic Plague with Iodine, Camphor and Thymol.—Carman reports a considerable reduction in mortality from an epidemic of plague prevalent in Nairobi in 1926 following the institution of the treatment by injection of a solution consisting of: weak tincture of iodine, B. P., 15 minims (0.92 cc.), and camphor and thymol, 7½ grains (0.5 Gm.) of each, in 2 cc. water. The injection is made directly into the affected glands. If the temperature does not drop appreciably by the next day, another injection of half the dose is given; otherwise a full dose is given on alternate days until recovery is assured.

Lancet, London

2: 951-1002 (Nov. 5) 1927

*Pathology of Pneumonia. J. F. Gaskell.—p. 951.
*Minot-Murphy Liver Diet in Addison's Anemia: Two Cases. J. H. Anderson and E. I. Spriggs.—p. 958.
Blood Transfusion in Sprue. G. C. Low and W. E. Cooke.—p. 960.
*Pernicious Anemia: Bacillus Welchii as Causal Agent. S. Davidson.—p. 961.
*Local Origin of Increased Bactericidal Power of Blood Following Ultraviolet Irradiation of Skin. A. Eidinow.—p. 963.
Chronic Influenzal Fibrosis of Lungs. W. H. Wynn.—p. 964.
Spontaneous Pneumothorax Treated by Gas Replacement. J. D. Macfie and R. L. Osmaston.—p. 967.
*Foreign Body Inadvertently Swallowed. S. F. Allison.—p. 968.
*Scarlet Fever of Toxic Type. C. Banks.—p. 968.

Pathology of Pneumonia.—The estimation of the virulence of the infecting organism in pneumonia, Gaskell says, is of the utmost importance. The virulence titer can be measured in mice. Organisms whose titer is below 3 do not have any pathogenic value in the healthy host. Organisms of titer 4 produce bronchopneumonic lesions. Organisms of titers between 4 and 5 produce lobular lesions. Organisms of titers between 5 and 6 produce either (1) lobar pneumonia or (2) general infection of the thoracic serous cavities. Organisms of titers between 6 and 7 produce either (1) lobar lesions, which become septicemic, or (2) the septicemic or miliary lesion. Lobar pneumonia in the healthy adult is due to organisms of titers between 5 and 7, which are otherwise comparatively rare. The deduction is made that it is spread by direct contact, infection passing from throat to throat, though very possibly intermediate carriers are often concerned.

Liver Diet in Pernicious Anemia.—Two cases are reported by Anderson and Spriggs in which good results came from the liver diet. The liver was taken in slightly roasted form, almost raw in sandwiches, underdone in soup, or as a cream.

Bacillus Welchii as Cause of Pernicious Anemia.—Davidson is convinced that clinical symptoms and pathologic manifestations support the view that pernicious anemia is caused by an absorption of toxin from the intestinal tract. A bacteriologic examination of both small and large intestine shows a nonproteolytic fermentive flora which is typical for pernicious anemia. A qualitative examination shows the organism to be similar to those found in health. A quantitative examination shows an enormous increase of viable organisms, particularly in regard to *Bacillus welchii*. Biologic and experimental evidence points to *Bacillus welchii* as the most probable causal agent.

Ultraviolet Rays Increase Bactericidal Power of Blood.—The results of Eidinow's experiments indicate that the erythema dose of light applied to an area of skin increases the bactericidal properties of the blood flowing through the site of irradiation, and in this way the blood in the general circulation develops a greater bactericidal activity.

Swallowing Safety Razor Blade.—In Allison's case, a piece of razor blade was evacuated after traversing the whole alimentary canal with practically no untoward consequences. While eating toffee, the patient swallowed a triangular piece of "safety razor" blade, with a long side made by the cutting edge of the blade, and an acute angle making a sharp needle-like point. The only immediate result was the expectoration of 2 ounces (60 cc.) of blood, presumably from the mouth. The same evening a meal of cotton-wool and jam was administered, and the following morning a meal of thick oatmeal porridge. The roentgenogram showed the blade almost halfway up the ascending colon, embedded centrally in its contents. In the afternoon of the next day, 1½ ounces (45 cc.) of castor oil was given. The blade was passed the following morning.

Scarlet Fever of Toxic Type.—Banks reports a case of toxic scarlet fever of fulminating character, the patient dying before the rash had appeared.

Acta Dermatologica, Kyoto, Japan

10: 223-366 (Sept.) 1927

Experimental Kidney Surgery: Value of Intravenous Injections of Physiologic Sodium Chloride Solution After Operation. S. Shimomura.—p. 272.
Bacteriologic Studies of Impetigo: II. Impetigo Albostaphylogenes Dohi and Impetigo Bockhart. M. Aochi.—p. 317.
Variation Curve of Content of Nonprotein Nitrogens in Serum of Mice Infected with Relapsing Fever. K. Fujita and M. Honda.—p. 323.
Lipoid Metabolism in Blood of Rabbits Having Tar Epithelioma. T. Shimoda.—p. 334.
*Therapeutic Effect of Oxyacetyl-Aminophenylarsinic Acid on Experimental Rat-Bite Fever in Rabbits. M. Abe and T. Shimoda.—p. 347.
So-Called Porokeratosis (Mibelli) with Mucous Membrane Eruptions. T. Yamamoto.—p. 354.

Treatment of Rat-Bite Fever.—The curative effect of this preparation administered by mouth was tested by Abe and Shimoda in rabbits suffering from experimental rat-bite fever, the inoculation having been made in the scrotum or the eyelid. When the dose used varied from 0.2 to 0.35 Gm. per kilogram of body weight, the curative effect was quite remarkable, the local lesion disappearing within two days and the blood spirochetes after three days. Recurrences did not occur. As an untoward reaction, however, disturbance of appetite was noted. Administration of three doses, of 0.05 Gm. each, at two day intervals, resulted in healing of the local lesion within eight or ten days and disappearance of the spirochetes in the blood within five days. The untoward reactions were much slighter. When six doses, of 0.025 Gm. each, were administered at intervals of two or three days, clinical healing was brought about after ten or fifteen days, the spirochetes being absent after eleven days, and no untoward by-effects being seen.

Archives Médicales Belges, Brussels

80: 497-544 (Oct.) 1927

*Smallpox Vaccination with Neutralized Vaccine. Wagemans.—p. 497.
Organization of Military Health Service. Leman.—p. 502.
Radiologic Exploration with Lipiodol. Toussaint.—p. 510.

Smallpox Vaccination with Neutralized Vaccine.—From experience with seventy cases, Wagemans concludes that a glycerine emulsion of an antivariolic vaccine greatly diminishes vaccinal reactions. This method is preferable for use in children.

Gazette des Hôpitaux, Paris

100: 1277-1292 (Sept. 28) 1927

Tannic Acid Treatment of Burns. A. Floresco.—p. 1281.
*Tetanus in New-Born Infant. Deshayes.—p. 1285.

Case of Tetanus in New-Born Infant.—The infant whose case is reported by Deshayes was brought to the hospital at the age of 12 days with tetanus. It was born in a wagon, to which fact is ascribed the umbilical infection. Antitetanic serum, from which the albumin had been removed, and chloral solution were injected subcutaneously for a month. For the first week several injections a day were given. The daily doses were calculated for the child's weight, to correspond to 240 cc. of serum and 20 Gm. of chloral for an adult weighing 60 Kg. After six weeks the last of the stiffness disappeared.

100: 1309-1324 (Oct. 5) 1927

*Sugar Breakfasts for Tuberculous Patients. C. A. Piguet and P. Véran.—p. 1313.
Cartilaginous Autoplasty for Cranial Defects. G. Pascalis.—p. 1314.
Procedure in Premature Rupture of Membranes. Bourret.—p. 1316.

Attempt to Fatten Tuberculous Patients by Means of Sugar Breakfast.—An overpowering sensation of hunger appears three or four hours after the ingestion of two cups of tea to which have been added seven or eight pieces of sugar. The second cup of tea is taken one-half hour after the first. This sugar breakfast must be continued for at least ten days, at most three weeks. If, at the end of one week, the patient has not gained weight, it is useless to persevere. In eight of ten cases, treated by Piguet and Véran, the weight remained the same, although the appetite for the noon meal was much increased. Two cases were more satisfactory. Toward the end of the test, these patients lost appetite, but kept their gains in weight (700 Gm. for one, 1 Kg. for the other).

Journal des Practiciens, Paris

41: 609-624 (Sept. 17) 1927

Tetany: Spasmogenic Diathesis or Spasmophilia. Marfan.—p. 609.
*Primary Tuberculosis of Patella. J. Fouchou-Lapeyrade.—p. 613.

Primary Tuberculosis of Patella.—Fouchou-Lapeyrade reports a case of primary tuberculosis of the patella which he observed for eighteen months. The child had lived for six months with an aunt who afterward died of pulmonary tuberculosis. Nine or ten months after he was separated from his aunt, he slipped and fell on his right knee. Some days later it was noticed that he dragged his leg in walking. There was pain and some muscular atrophy. Rest and a compressive dressing were prescribed. After six months the child was allowed to return to normal life. Three months later, however, symptoms returned and an operation was performed. The leg is at present immobilized in a partial plaster cast, which is removed for several hours during the day, when the patient is submitted to heliotherapy.

41: 641-656 (Oct. 1) 1927

Respiratory Complications of Acute Rheumatism. Achard.—p. 641.
*Cervical Adenopathy Symptomatic of Epithelioma of Larynx. Hartmann.—p. 646.
The Soil of Oxyurosis. J. Séval.—p. 647.

Cervical Adenopathy Symptomatic of Epithelioma of Larynx in a Patient with Epithelioma of the Penis.—A lobulated tumor in the substernomastoid region appeared in a man, aged 48, who had had the penis amputated for an epithelioma about nine years before. His present symptoms are those of an epithelioma of the superior orifice of the larynx. He has disturbances of deglutition, rejections of fluids through the nose, etc. Two successive epitheliomas with no connection between them are interesting, but not unknown. Hartmann suspects that an identical cancer agent may determine a special reaction in each tissue; on pavement epithelium, a squamous cell epithelioma.

Presse Médicale, Paris

35: 1129-1144 (Sept. 17) 1927

*Ventricular Bradycardia from Stenosis of Artery of Bundle of His. E. Géraudel, R. Bénard, C. Gautier and Heymann.—p. 1129.
Is Primary Tuberculous Infection Always Chidhood Disease? Phelebon.—p. 1131.
Treatment of Epilepsy with Ketogenic Diet. P. Pagniez.—p. 1132.

Third Case of Ventricular Bradycardia from Stenosis of Artery of Bundle of His (Adams-Stokes Syndrome).—A case, clinically demonstrated as permanent ventricular bradycardia, is reported. Anatomic examination revealed that the bundle of His was intact. Its artery and the right coronary artery were almost completely obstructed by a focus of endarteritis, considerably reducing the flow of blood to the bundle of His. This is the third time this condition has been anatomically demonstrated in a clinical ventricular bradycardia.

Revue Médicale de la Suisse Romande, Geneva

47: 789-852 (Sept. 25) 1927

Gastric Tetany. G. Du Pasquier.—p. 789.
*Poisoning from Dried Mushrooms. M. Roch and P. Gautier.—p. 799.
Diffuse Osteoscleroses, Osteosclerotic Anemias. J. J. Mozer.—p. 802.
Tuberculosis and Traumatism. E. Frommel.—p. 832.

Poisoning from Dried Mushrooms.—The case reported by Roch and Gautier is that of a man, aged 70 years, who with his valet ate a pâté of dried mushrooms bought three days previously. Four hours after the meal, the man was taken with vomiting and diarrhea. The pulse was small and rapid, the arterial pressure very low, the eyes appeared sunken and there were cramps of the arms and legs. The patient improved after drinking water and receiving an injection of physiologic sodium chloride solution. The valet, aged 21 years, was taken with the same symptoms, but recovered more quickly. Some mushrooms that were left were examined. They were found to be dark, sticky and mouldy in places. Evidently, it was a case of nonspecific poisoning from spoiled mushrooms.

Schweizerische medizinische Wochenschrift, Basel

57: 945-968 (Oct. 1) 1927

Avoidance of Prolapse of Vitreous and Iris in Operation for Senile Cataract. E. Kappeler.—p. 945.
New Constitutional Type System for Women. J. S. Gaiant.—p. 951.
*Connection Between Sex and Side of Site of Corpus Luteum. Schöner.—p. 953.
*Puerperal Venous Occlusion in the Orient. J. Fallscheer-Zürcher.—p. 954.
Roux's Ice-Tongs and Consolidation of Fractures. G. de Rham.—p. 956.
Case of Encephalitis Lethargica and Parkinsonism Improved by Treatment. A. Peter.—p. 960.
Medicolegal Aspect of Wrong Diagnosis. Editorial.—p. 961.
Legal Aspect of Therapeutic Abortion. Labhardt, P. Jung and H. Maillart.—p. 962.

Is There a Connection Between Sex and the Side from Which the Ovum Sprang?—The material studied by Schöner included about 1,600 cases in which, by necropsy, cesarean section or previous unilateral oophorectomy, the site of the corpus luteum was made clear, and in 612 of which the sex of the child was known. In 992 further cases there was clinical evidence as to the site of the corpus luteum (tenderness of the ovary). From an analysis of this material he deduces three facts: (1) Ova of both sexes spring from both ovaries. (2) From the right ovary spring more ova from which boys develop, from the left, more ova from which girls develop. (3) Of fertilized ova, more originated in the right than in the left ovary. In the necropsy and cesarean section material, he found the corpus luteum in the right ovary 831 times and in the left ovary 692 times. If, in accordance with a theory advanced by him some years ago, the sex proportion is two to one in favor of the male sex in the right ovary and two to one in favor of the female sex in the left ovary, in these 1,523 cases there must have been 554 boys and 277 girls from the right ovary and 462 girls and 231 boys from the left ovary, in all 785 boys and 739 girls, which is equal to the proportion 106.22: 100.00. He regards these figures as confirming the validity of his theory.

Venous Occlusion in Puerperium in Orient.—In general practice in Mesopotamia between 1897 and 1906, Fallscheer-Zürcher saw 2,152 confinements, with only two cases of puerperal thrombosis. In neither case was infection apparent. In explanation of the rarity of puerperal thrombosis he calls attention to certain features of the life of Oriental women: the carrying of heavy loads on the head, which makes the muscles of the abdomen, back and legs firm and elastic; the fact that domestic duties (cooking, washing, etc.) are carried out in the squatting position, not standing or sitting on chairs. "Her entire life is passed between squatting and walking." Third, her lying-in period is very brief; at the latest on the fifth day, often on the first or second day after delivery, she is up and about. In women without varices (and varices are very rare), this practice, he says, together with that of carrying loads on the head favors involution of the genital organs and good venous circulation. He advises that walking and running with weights on the head be included in gymnastics for girls, and recommends low tables and chairs, especially in work rooms and kitchens and for women and children.

Ospedale Maggiore, Milan

15: 227-258 (Aug. 31) 1927

*Primary Cancer of Lung. G. Casolo.—p. 227. C'tn.
Resection of Pleural Adhesions in Therapeutic Pneumothorax (Jacobaeus' Operation). E. De Castiglione.—p. 242. C'td.

15: 259-302 (Sept. 30) 1927

*Primary Cancer of Lung. G. Casolo.—p. 261. C'cn.
Pancreatic Function. G. Vercellotti.—p. 273. C'td.
Asthma and Tuberculosis. G. Pirani.—p. 278.
Jacobaeus' Operation. E. De Castiglione.—p. 288. C'td.

Primary Lung Cancer.—Italian figures are rather low as regards cancer of the lung. Among 2,658 necropsies at Padua (1914-1925) 200 carcinomas were found, and of these, two were primary in the lungs. At Pisa (1896-1926) only two cases were brought to light at the Pathologic Institute. Casolo reviewed 11,968 necropsy records at Milan for the last fifteen years and found fifteen cases. The patients' ages ranged from 21 to 74 years.

Pediatria, Naples

35: 1025-1088 (Oct. 1) 1927

Pseudohypertrophic Paralysis. L. Auricchio.—p. 1025.
*Kidney Disease in Children. M. Giuffrè and A. S. Pagliaro.—p. 1035.
Fever in Paroxysms of Whooping Cough. R. Canino.—p. 1051.
Case of Intestinal Occlusion. S. de Stefano.—p. 1055.
Case of Preleukemic Myelosis. F. De Capua.—p. 1059.

Blood and Urine Reactions in Kidney Disease in Children.—Among thirteen children with kidney disease of the nitrogen retention type, Giuffrè and Pagliaro noted that the decrease of the blood p_H and alkaline reserve paralleled the clinical gravity of the case. The p_H falls only in serious cases. In addition to indicating the degree of renal insufficiency, the determination of the p_H and the alkaline reserve throws light on the defensive forces of the body. A single determination of the urinary p_H is useless, but a series of readings during the water test may reveal the change in renal function.

Archivos Americanos de Medicina, Buenos Aires

3: 95-130 (Oct. 1) 1927

*Prevention of Mastitis. L. Velasco Blanco and H. Paperini.—p. 100.
Rat Bite Fever in a Child. E. Cienfuegos.—p. 106.
Paralysis Following Rabies Treatment. C. Pelfort.—p. 109.
Leukanemia. M. Acuña and A. Casaubón.—p. 112.

Prevention of Mastitis in Lactation.—At a Buenos Aires Maternity, Velasco and Paperini have for eight months used DeBuys (New Orleans) breast bandages. No case of suppurative mastitis has developed.

Archivos Españoles de Pediatría, Madrid

11: 513-576 (Sept.) 1927

*Mongolian Idiocy. S. Cavengt.—p. 513.
Diphtheria Immunity. F. Cirajas.—p. 534.

Increase of Mongolism.—The war is usually blamed for the apparent increase in Mongolian idiocy. This would hardly apply to Spain. More accurate diagnosis may be a factor. Cavengt reports nine cases. No medication has so far proved very successful. Some hypothyroid patients are occasionally mistaken for Mongolian cases. This might explain cures reported following the administration of thyroid.

Archivos Latino-Americana de Pediatría, Buenos Aires

21: 539-630 (Aug.) 1927. Partial Index

*Diphtheric Paralysis. L. Morquio.—p. 539.
Acute Infections in Infants. J. Schwrazenberg L.—p. 554.
Immunization Against Infectious Diseases. F. W. Schlutz.—p. 570.
Manifestations of Congenital Syphilis in Infants. P. Rueda.—p. 594.

Diphtheric Paralysis.—From 1909 to 1926, in 831 cases of diphtheria, 2.40 per cent developed paralysis. In the first two quarters of 1927, among forty cases, 20 per cent exhibited paralysis. At Montevideo, diphtheria is usually mild. However, about half of those admitted to the hospital already suffer from croup and among them the death rate reaches 29 per cent.

Archivos de Medicina, Cirugía y Espec., Madrid

27: 373-404 (Oct. 1) 1927. Partial Index

Elementary Lesions of Nervous Centers. P. Del Rio-Hortega.—p. 373.
*Treatment of Epilepsy. R. Nóvoa Santos.—p. 393.

Treatment of Epilepsy.—Nine epileptics were treated by Nóvoa with a brain emulsion in 20 per cent sodium barbital solution. In most of the cases the improvement persisted after stopping the drug. The course embraces ten intravenous injections of 2 cc. The usual methods had previously failed in the majority of the patients.

Ars Medica, Barcelona

3: 253-288 (Aug.) 1927

*Bacterial Vaccines. A. Salvat Navarro.—p. 253.
Osteomyelitis and Cystic Fibrous Osteitis. L. R. Rius.—p. 263.
Treatment of Anthrax. J. P. Guillemin.—p. 266.

An Overlooked Danger in Bacterial Vaccines.—In Barcelona and elsewhere some cases of typhoid occurred among persons inoculated by mouth. A laboratory study demonstrated living paratyphoid bacilli in some tubes 2½ months old. Salvat warns that the treatment of bacterial emulsions with ether, chloroform and possibly other antiseptics may occasionally fail to kill the germs. All vaccines should be retested periodically.

Brasil-Medico, Rio de Janeiro

41: 1003-1034 (Sept. 24) 1927

Abnormal Types of Epidemic Encephalitis. H. Roxo.—p. 1003.
*Cinchophen and Jaundice. C. De Rezende.—p. 1005.
Atropine Solution. M. da Rocha, Jr.—p. 1006.
Ludwig's Angina. G. De Mello.—p. 1007.
Chemical Therapy of Pulmonary Tuberculosis. A. L. Stockler.—p. 1010.
Use of Ultraviolet Rays. J. M. Da Rocha.—p. 1014.

Jaundice from Cinchophen.—In a woman with jaundice, the history revealed that she had taken cinchophen for rheumatism. The pains were relieved, but the jaundice took their place. The patient went afterward to another physician. Cinchophen was prescribed again and the jaundice reappeared. Rezende knows of two similar cases.

Lisboa Médica, Lisbon

4: 301-355 (July) 1927

*Arterial Encephalography. E. Moniz.—p. 301.

Arterial Encephalography.—The encephalographic test described by Moniz consists in injecting into the internal carotid, 8 cc. of 25 per cent sodium iodide solution and taking a roentgenogram of the head. In two cases, a diagnosis was thus made of pituitary tumor and of an infiltrating tumor, respectively. In another case the results of the test in the cadaver agreed with the necropsy findings. Had the test been made before death it might have been possible to save the patient's life.

Prensa Médica Argentina, Buenos Aires

14: 385-416 (Sept. 10) 1927

Recklinghausen's Disease. M. R. Castex, A. F. Camauër and A. Battro.—p. 385.
Azorubin as a Liver Test. M. Zinny.—p. 402.
*Blood Groups in Argentina. S. Mazza and I. Franke.—p. 408.

Blood Groups in Northern Argentina.—In Argentine Indians Mazza and Franke were unable to find any belonging to

groups A or B. In 83 per cent of pure Argentines and 59 per cent of mixed natives these groups were not represented. Such data seem to speak against the possible Asiatic origin of American natives. Among Eastern races, the B agglutinogen seems to predominate.

14: 417-456 (Sept. 20) 1927

Primary Lung Cancer. T. Castellano and J. Orgaz.—p. 417. C'td.
Pseudosyringomyelia. M. R. Castex and A. F. Camauër.—p. 427.
*Treatment of Enuresis. E. M. Pueyrredón.—p. 441.
Plasmochin in Malaria. S. Mazza et al.—p. 446.

Ultraviolet Ray in Enuresis.—Seven children suffering from nocturnal enuresis recovered after from one to nine applications of ultraviolet rays. Pueyrredón does not think the effect was psychic. The irradiation was over the sacrococcygeal joints.

Revista de Higiene y de Tuberculosis, Valencia

20: 201-228 (Aug. 31) 1927. Partial Index

*An Antimalarial Vaccine. J. Ferrán.—p. 210.

Possible Vaccination Against Malaria.—Ferrán speculates on the possibility of preventing mosquitoes from biting by injecting their proteins. He has already demonstrated the innocuousness of such a vaccine. After five injections, each of which contained the constituents of five mosquitoes, the presence of antibodies was already evident in the blood.

Revista Ibero-Americana de Ciencias Médicas, Madrid

2: 87-134 (Sept.) 1927. Partial Index

*Double Stethoscope. A. Mut.—p. 100.

A Double Stethoscope.—For over twenty years Mut has been using a double stethoscope very similar to the one described by Boston in THE JOURNAL (June 4, 1927, page 1796). He describes its advantages for many purposes.

Revista Médica Latino-Americana, Buenos Aires

12: 1669-1816 (Aug.) 1927

*Resection of Intestine and Pylorus. R. Araya and A. G. Neumann.—p. 1669.
Partial Hydatiform Mole. P. Ferrazini and F. R. Ruiz.—p. 1681.
Defects of Radius and Ulna. D. Del Valle and R. E. Donovan.—p. 1698.
*Bleeding in Nephritis. E. C. Vivanco.—p. 1705.
Ankylosis of Elbow. J. Valls and C. E. Ottolenghi.—p. 1726.

Modified Technic for Intestinal Section and Pylorectomy.—In resection of the intestine and pylorus, simple ligation without previous enterostomy shortens the operation and minimizes the danger of peritoneal contamination. The anastomosis should be side-to-side instead of end-to-end. Illustrations show the technic. The bowel is tied as in an appendectomy, purse-string sutures are placed on both stumps to be preserved, and the cutting takes place between the ligature and the clamp.

Venesection in Nephritis and Uremia.—Vivanco reports eight cases to show the improvement following bloodletting in acute uremia and nephritis.

Semana Médica, Buenos Aires

34: 649-724 (Sept. 15) 1927

Etiologic Classification of Skin Diseases. N. V. Greco.—p. 649.
*Cause of Glaucoma. E. P. Fortin.—p. 663.
*Intramammary Injections and Uterus. J. León.—p. 669.
Radium in Uterine Cancer. A. J. Bengolea and A. J. Pavolovsky.—p. 689.
Enlarged Pylorus and Duodenal Pressure. P. T. Panza.—p. 700.
Mesosigmoid Cyst. B. Elkin.—p. 704.
Ophthalmia Neonatorum. L. G. Gret.—p. 706.
Sexual Impotence. F. E. Grimaldi and R. de Surra Canard.—p. 721.

Treatment of Glaucoma.—The rational treatment of glaucoma, at least in the prodromal stage, consists in strengthening or contracting the ciliary muscle. Myotics are the specific medication. This does not exclude iridectomy or sclerostomy, as indicated.

Intramammary Injections of Sodium Chloride Solution in Labor.—León has used intramammary injections (500 cc.) of sodium chloride solution in fifty cases to stimulate the uterine muscle. He found the method useful both during and after labor.

Siglo Médico, Madrid

80: 317-340 (Oct. 1) 1927

*Syphilis and Internal Diseases. G. Marañón, R. Comas and J. Jimena.—p. 317.

Syphilis and Internal Diseases.—Marañón and others found a history of syphilis in 11.1 per cent of 878 patients in a clinic. The ratio may increase to 38.8 per cent among the poorer classes. The percentage is lower among the women. In two thirds of the 11.1 per cent syphilis had a direct influence in the causation of the present disease. Among cases of vascular disease, a history of syphilis may be found in 39.8 per cent. In eighty-five cases of clear-cut syphilis, the Wassermann test proved negative in more than 50 per cent. In 138 doubtful cases in which the diagnosis depended on the test, this proved positive in 29.7 per cent.

Archiv für Psychiatrie und Nervenkrankheiten, Berlin

81: 629-787 (Sept. 30) 1927

Relation of Capillary Forms to Mental Development. H. K. Kahle.—p. 629.
Epithelium-Like Covering of Cysts in Gliomas. L. J. Smirnoff.—p. 641.
Motor Disturbances in Extrapyramidal Diseases. M. Neiding and L. Blank.—p. 659.
*Pathogenesis of Epilepsy. W. Zeller.—p. 696.

Pathogenesis of Epilepsy.—The important attacks in the case reported by Zeller occurred only in sleep, usually some time after the patient, a man, aged 28 years, had fallen asleep. The first attack dated from the beginning of frequent and regular sexual activity. Seizures ceased in the hospital, to reappear with the resumption of sexual intercourse. Hypersensitiveness of the parasympathetic system was demonstrated by hyperventilation tests. The author concludes that the combination of the latent cerebral irritation, the spasmophilic condition of sleep and the sympathetic overstimulation with sexual hyperfunction may produce the epileptic attack.

Beiträge zur Klinik der Tuberkulose, Berlin

66: 683-796 (Aug. 25) 1927

*Ultimate Results of Artificial Pneumothorax in Pulmonary Tuberculosis at High Altitudes. E. C. Neumann and J. E. Wolf.—p. 688.
Roentgen-Ray Picture of Bronchus Draining Tuberculous Cavities. J. E. Wolf.—p. 700.
Experimental Production of Complement-Binding Antibodies for Fats of Simple Constitution. J. E. Wolf.—p. 710.
*Phrenicectomy in Cavernous Phthisis of Upper Lobe. J. E. Wolf and H. Lossen.—p. 719.
Climate of Schatzalp. C. Dorno.—p. 724.
*Should Sedimentation Test be Made While Fasting? H. Fetzer.—p. 738.
Value of Twenty-Four-Hour Fahräus Sedimentation Reaction in Phthisic Patients in Third and Fourth Decade of Life. H. Fetzer.—p. 742.
Ball Formations (Fibrin?) in Pleural Cavity During Artificial Pneumothorax. H. Lossen.—p. 751.
Late Lesions of Aquired Syphilis in Lung Complicating Tuberculosis. H. Lossen.—p. 761.
*Is Tuberculosis of Larynx Contraindication to High Altitudes? Luzzatto-Fegiz.—p. 773.
*Hemoptysis at High Altitudes. P. Lansel.—p. 784.
Differential Diagnosis of Chronic Cirrhotic Lung Processes. H. Dietlen.—p. 792.

Ultimate Results of Artificial Pneumothorax in Pulmonary Tuberculosis at High Altitudes.—Neumann and Wolf stress the importance of careful supervision of these cases both during and after the institution of the artificial pneumothorax. The combination of pneumothorax, sanatorium treatment and climate, preferably that of a high altitude, is said to afford the best results. They report 81 per cent of cures among 116 patients after from two to eighteen years.

Phrenicectomy in Cavernous Phthisis of Upper Lobe.—A case is cited by Wolf and Lossen to justify phrenicectomy as against thoracoplasty and artificial pneumothorax in certain cases of pulmonary tuberculosis. This is especially true when the disease involves the upper lobes. A favorable influence is exerted not only on the diseased lung, but also on the trachea, heart and aorta.

Should the Sedimentation Test Be Made While Fasting?—Fetzer does not deem it necessary to make this test either before or after breakfast, but believes that as it is first made so it should be continued for the purpose of obtaining uniform findings, as only repeated tests are of value.

Is Tuberculosis of the Larynx a Contraindication to High Altitudes?—Luzzatto-Fegiz does not regard high altitudes as

being detrimental in cases of laryngeal tuberculosis. He says that a cure can be affected in more than 20 per cent of cases. The stage of the disease in the lungs and the condition of other organs are of far more importance than the laryngeal disease itself.

Hemoptysis at High Altitudes.—Inasmuch as high altitudes, with sanatorium care, afford the best means for cicatrizing the lung lesions in tuberculosis and effecting a cure, they also constitute the ideal means of preventing hemorrhage from the lung.

Deutsche medizinische Wochenschrift, Berlin

53: 1669-1714 (Sept. 30) 1927

Atypical Gout. Goldscheider.—p. 1669.
Mechanism of Evacuation of Extrahepatic Bile Ducts. G. von Bergmann.—p. 1672.
*Can the Organism Form Carbohydrate from Fat? S. J. Thannhauser.—p. 1676.
Cell Proliferation and Tissue Reaction. R. Bálint.—p. 1680.
Digestion of Starch of Unopened Plant Cells. J. Strasburger.—p. 1681.
Bitters and Stomachics. I. Boas.—p. 1683.
*Treatment of Diabetes Mellitus with Radium. W. Franke.—p. 1685.
Experience with Synthalin. R. Stahl and K. Bahn.—p. 1687.
Cure of Apparent Hourglass Stomach. M. Einhorn.—p. 1689.
Insulin Treatment of Hepatargic Conditions. J. Bamberger.—p. 1690.
"Dry" Sodium Chloride Retention in Diabetes. O. Klein and H. Holzer.—p. 1692.
New Method of Pepsin Determination. J. Roos.—p. 1693.
Operation for Ileus. H. Flörcken.—p. 1694.
Insulin Superalimentation. H. Simon.—p. 1694.
Influence of Vegetable Acid Alkalis Combined with Ingredients of Spring Water Containing Sulphates on Diseases of Digestive and Biliary Tracts and of Metabolism. K. Heine.—p. 1695.
Liquid Petrolatum in Pediatrics and Gynecology. J. Neu and H. Neu.—p. 1696.
Social Importance of Quackery. G. Lennhoff.—p. 1711. C'td.
Quackery in Austria. E. Gogler.—p. 1713. C'td.

Can the Organism Form Carbohydrate from Fat?—Thannhauser reviews critically the work of others on this question and concludes that we have no experimental evidence of the transformation of fat into sugar in the organism.

Treatment of Diabetes Mellitus with Radium.—Franke failed to obtain any results from radium, applied in the rectum or vagina, in five patients with diabetes. In view of Rosinski's success with the same technic, he intends to give the treatment further trial with selected cases.

Münchener medizinische Wochenschrift, Munich

74: 1611-1650 (Sept. 23) 1927

Regulation of Blood Pressure on Change of Position. H. E. Hering.—p. 1611.
*Odor of Breath in Cardiac Decompensation. H. Assmann.—p. 1613.
Encephalitis in Psychiatry. A. Bostroem.—p. 1615.
Sequelae of Encephalitis Lethargica from War Injuries. G. Stiefler.—p. 1618.
New Heart Reflex. J. S. Schwarzmann.—p. 1621.
New Sign of Pregnancy. B. Lörincz.—p. 1621.
*Treatment of Pernicious Anemia with Liver. Schottmüller.—p. 1623.
Pathogenesis and Treatment of Roentgen-Ray Sickness. G. von Pannewitz.—p. 1624.
*Treatment of Ozena with Diphtheria Immunization. F. von d. Hütten.—p. 1625.
*Substitute for Oertel's "Terrain" Treatment. K. Hertzell.—p. 1626.
*Familial Occurrence of Hirschprung's Disease. P. Buttersack.—p. 1626.
*Case of Weil's Disease from Accident. F. A. Bönnig.—p. 1628.
Rapid Micromastic Test. N. Melczer and O. Dahmen.—p. 1630.
Health Attachés. H. Berger.—p. 1633.
Justifications for Interruption of Pregnancy. J. Schiedermair.—p. 1634.

Odor of Breath in Cardiac Decompensation.—A characteristic, sweetish, slightly aromatic odor, resembling somewhat that of unboiled milk, has been noted by Assmann constantly in the breath of persons with severe decompensation. He is unable to throw light on the source of the odor.

Treatment of Pernicious Anemia with Liver.—Six cases in which liver diet (250 or 500 Gm. daily) was followed by improvement in general condition and by rapid rise in hemoglobin and in the number of erythrocytes are recorded by Schottmüller. Because of the difficulty experienced by some patients in taking the required amount of liver every day, Schottmüller had liver prepared in powdered form.

Treatment of Ozena with Active and Passive Diphtheria Immunization.—Hütten treated eight cases with a toxin-antitoxin mixture (Marburg Behringwerke) according to the technic employed successfully by Vogel. One patient improved, in seven the treatment failed. It represents, he believes, merely a nonspecific activation therapy.

Substitute for Oertel's "Terrain" Treatment.—Hertzell describes a tricycle in the running of which both arms perform rowing movements while the legs make treading movement. The exercise which it provides is well suited to strengthen the heart muscle and Hertzell recommends the tricycles for use in flat districts as a substitute for Oertel's climbing exercises. A picture of the new tricycle (Ruderrad) appears.

Familial Occurrence of Hirschsprung's Disease.—Buttersack presents a family tree in which both parents suffered from gastric lesions (ulcer in the man, carcinoma in the woman). Of the four children, one son had Hirschsprung's disease. Of the eleven grandchildren, two boys and one girl had Hirschsprung's disease. The other members of the family were all healthy.

Case of Weil's Disease Caused by Accident.—A man fell into a ditch and swallowed a large amount of ditch water. Weil's disease developed and proved fatal. It is assumed that the ditch water was infected with *Spirochaeta icterogenes* from the urine of infected rats. The connection between the accident and man's death was affirmed in the court testimony.

Virchows Archiv für path. Anat. und Physiol., Berlin

265: 545-859 (Sept. 30) 1927

*Classification of Endocarditis. H. Krischner.—p. 545.
Morphology of Leukocytes in Enteric Sensitization and Anaphylaxis. R. Gawrilow.—p. 583.
Secondary Nodes in Lymph Glands. W. Rotter.—p. 596.
Peculiar Amyloid Formation in Cervical Gland Growths. K. von Gusnar.—p. 617.
Squamous Cell Adenoma in Tube. A. Priesel.—p. 630.
Rare Case of Congenital Lipoma of Femoral Vein. J. Gangler.—p. 643.
Histology of Neurinoma. F. Nestmann.—p. 646.
Coincidence of Brain Cystocercus and Tumor. W. Schley.—p. 665.
Blood Vessels in Cerebral Hemorrhage. E. Pollak and P. Rezek.—p. 683.
Lymphatic Tissue Reaction of Appendix. K. Nishikawa.—p. 735.
Renal Changes in Nutritive Disturbances of Infants. H. Strohe.—p. 765.
Angiospastic Nonembolic Origin of Renal Infarcts and of Gangrene of Extremities. K. Neubürger.—p. 789.
Morphology and Microchemistry of Animal Cells. M. Gutstein.—p. 805.
Relationship Between Oxydases, Vital Staining, Postmortem Staining and Morphology of Cell. W. Loele.—p. 827.
Aleukemic Myelosis with Generalized Osteosclerosis. A. Jores.—p. 845.

Classification of Endocarditis.—Krischner proposes a classification of endocarditis based on anatomicopathologic characteristics. He differentiates three types, endocarditis verrucosa simplex, endocarditis rheumatica and endocarditis maligna. The last is further subdivided into ulcerative and polypous types. The first group is recognizable by the presence of small vegetations strictly limited to the ostium, most frequently of the mitral valve. Microscopic examination fails to reveal fibrin, bacteria, round cell or leukocytic infiltration. An entirely different picture is presented by the malignant form. The vegetations, in some cases ulcerations, cover the ostia, valves, trabeculae, and the endocardium of both ventricles and auricles. The vegetations here are of larger size. Microscopically they show blood platelets, masses of bacteria, leukocytes, fibrin and erythrocytes. The rheumatic form occupies an intermediary position. The author calls attention to the fact that histologic characteristics of rheumatic endocarditis were first described and differentiated as a special clinical entity by American workers.

Wiener klinische Wochenschrift, Vienna

40: 1217-1244 (Sept. 29) 1927

Anomalies of Human Skull. H. Abels.—p. 1217.
*Gastric Function and Reaction of Blood. G. Holler and J. Blöch.—p. 1221.
Turbidity and Flocculation Reactions in Practice. H. Gross.—p. 1223.
Treatment with Modified Antivirus. R. Demel, F. Driak and P. Moritsch.—p. 1225.
*Pregnancy with Ductus Botalli Persistens. B. Zins.—p. 1227.
Football Injuries. L. Biener.—p. 1229.
Unilateral Distant Reflexes as Diagnostic Aids. I. Knotz.—p. 1231.
Treatment of Tonsillitis. H. Marschik.—p. 1234.
Morphine in Cardiovascular Diseases. E. Zak.—p. 1238.
Roentgen-Ray Treatment of Blood and Blood-Forming Organs. G. Schwarz. Supplement.—pp. 1-7.

Gastric Function and Reaction of Blood.—Holler and Blöch studied the changes in the chemical composition of the blood

during the process of digestion, i. e., as influenced by the secretory activity of the glands of the stomach. In persons with normal acidity, ingestion of a test breakfast is followed immediately by a lowering of the blood chloride. Gradually this returns to normal. The alkalinity of the blood is increased not only by the withdrawal of hydrogen ions from the blood into the stomach, but also by increase in the alkali reserve from the liberation of alkali ions through the splitting off of chloride from sodium chloride for the formation of hydrochloric acid in the stomach.

Pregnancy in Ductus Botalli Persistens.—Zins records two cases in which women with persisting ductus arteriosus passed safely through pregnancy and labor without observable damage to the heart. The results of the disturbance of circulation in this anomaly are hypertrophy of the right ventricle and increased pressure in the pulmonary artery, changes similar to those in compensated mitral insufficiency. With a patent ductus arteriosus the heart muscle is intact. It is the condition of the heart muscle, he avers, that is the determining factor in the outcome of a valvular defect.

Zeitschrift f. d. ges. Neurol. u. Psychiat., Berlin

110: 695-802 (Sept. 29) 1927

Apoplectic Hemitonia as Probable Form of Acute Striatum Lesions. W. Bechterew.—p. 696.
*Mode of Action of Therapeutic Malaria in Progressive Paralysis. W. L. Brütsch.—p. 713.
Tonus Reflexes in Neuropathic Patients. M. Kroll.—p. 729.
Schizoid and Syntonic Alcoholics. S. G. Jislin.—p. 750.
Ament Psychosis with Tumor of Pituitary. P. Schilder and M. Weissmann.—p. 767.
*Etherizing Psychopathic Patients. P. Schilder and M. Weissmann.—p. 779.
*Epilepsy and Pregnancy. C. Clemmesen.—p. 793.
*Paralysis Agitans and Trauma. E. Henssge.—p. 796.

Mode of Action of Therapeutic Malaria in Progressive Paralysis.—Brütsch asserts that during the malaria treatment of progressive paralysis, histopathologic changes take place in the brain which represent a portion of the reaction of the reticulo-endothelial system. They are manifested by proliferation of the endothelial cells of the capillaries.

Results of Etherizing Psychopathic Patients.—Schilder and Weissmann report their experiences with ether narcosis in a number of cases of mental disturbances. They assert that distinct improvement in the patient's mental condition was noted after each narcosis. The improvement was sometimes of two or three weeks' duration. The method is not of value in differential diagnosis.

Epilepsy and Pregnancy.—In none of the forty-three cases of pregnancy in epileptics examined by Clemmesen has a convulsion caused abortion or influenced the course of labor. In 50 per cent of the cases analyzed, the epilepsy became worse during pregnancy; in 26 per cent it remained unaffected; in 17 per cent it was improved; it became first worse, then better in 7 per cent.

Etiologic Relationship of Trauma to Paralysis Agitans.—Two cases cited by Henssge are believed to establish a definite etiologic relationship between trauma and paralysis agitans. One patient sustained a severe contusion of the shoulder girdle; the second patient fell down a ladder and immediately afterward complained of pain in the arm and side.

Zeitschrift für Tuberkulose, Leipzig

49: 1-80 (Sept.) 1927

*Pathogenesis of Pulmonary Tuberculosis. K. Lydtin.—p. 1.
*Manganese Treatment of Pulmonary Tuberculosis (Walbum). O. Helms and J. Frederiksen.—p. 18.
Sanocrysin Treatment of Experimental Tuberculosis in Rabbits. H. Björn-Hansen.—p. 27.
Exeresis of Phrenic Nerve. L. Dünner.—p. 31.
Diet Treatment of Tuberculosis with Insulin. H. G. Zelter.—p. 35.

Pathogenesis of Pulmonary Tuberculosis.—Lydtin stamps as fiction the teaching that apical pulmonary tuberculosis has an insidious onset. In most cases the onset is relatively acute, and the progress rapid—even in patients advanced in years.

Manganese Treatment of Pulmonary Tuberculosis (Walbum).—Helms and Frederiksen report the results of the treatment of 115 cases of pulmonary tuberculosis by means of intravenous injection of manganese chloride. Of forty-two patients in stage I, thirty-five were improved, likewise thirteen of twenty-seven patients in stage II and twenty-two of forty-six patients in stage III. The duration of the treatment varied from twenty-two to 150 days. Only twenty-three patients failed to benefit from the treatment; two died. The method of treatment is not described clearly.

Klinicheskaya Meditsina, Moscow

5: 863-934 (Sept.) 1927

*Etiology and Treatment of Chronic Ulcerative Colitis. A. G. Alexeieff.—p. 863.
Adhesive Pericarditis. A. A. Gerke.—p. 871.
Treatment of Early Syphilis in Health Resorts. S. S. Nalbandoff.—p. 879.

Etiology and Treatment of Chronic Ulcerative Colitis.—Bacteriologic studies of cases of ulcerative colitis did not throw any light on the etiology. The difficulty lay in the multiplicity of the organisms found in the bowel and in the impossibility of obtaining some of these forms, such as spirochetes, amebae and other protozoa in pure cultures. Bacillus carriers do not, as a rule, develop colitis. Nonpathologic bacilli, such as *B. coli*, may become pathologic. Animal experiments, likewise, were negative. Alexeieff sees no justification for the infections theory of chronic ulcerative colitis, and argues that ulceration does not necessarily imply a bacterial cause. He points to bowel ulceration in uremic coma and to peptic ulcer of the stomach as examples of such. Germs found in the ulcers and in the feces of colitis patients play a secondary rôle. They do prevent healing but they are not the cause of ulcerations. He views chronic ulcerative colitis as an amicrobic pathologic process, possibly caused by functional disturbances of the large intestine. The neurogenic theory of the cause of peptic ulcer of the stomach suggests an analogy. The fact is that chronic ulcerative colitis is seen most frequently in vagotonic individuals, on the basis of a chronic spastic constipation.

5: 935-982 (Sept.) 1927

*Colloidal Chemistry Versus Cell Morphology. A. G. Alexeieff.—p. 935.
Advances in Modern Therapy. D. M. Rossiyskiy.—p. 942.
Water Metabolism. E. M. Tareeff.—p. 947.
Renal and Diabetic Acidosis and Alkali Reserve. T. H. Feldman.—p. 953.
Acidosis in Hunger. S. G. Levit.—p. 957.

Colloidal Chemistry Versus Cell Morphology.—Great advances in colloidal chemistry seem to have crowded out the importance of the cell. The morphologic approach to biologic and clinical problems is apparently being replaced by a humoral one. The new enthusiasm is perhaps overworked. The pure morphologist of the past no longer exists. He has become a morphologist-physiologist. The author does not agree with those who in the light of the new teaching regard Metchnikoff's theory of phagocytosis as obsolete. The new conception of the function of the reticulo-endothelial system is nothing more than an enlargement and amplification of Metchnikoff's teaching of phagocytosis. The brilliant advances of colloidal chemistry by no means diminish the importance of the cellular theory for the future of medicine.

Vestnik Rentgenologii i Radiologii, Leningrad

5: 93-240, 1927. Partial Index

Treatment of Malignant Tumors with Radium Emanations. M. T. Nemenoff.—p. 93.
Neoplasm of Thymus. A. Ugenburg.—p. 127.
*Experimental Cancer in White Mice. H. G. Soboleva.—p. 135.
Effect of Tar on Gastric Mucosa of Mice. L. M. Shabad.—p. 165.
Grafting of Human Melanosarcoma into an Animal. A. B. Repreff.—p. 223.

Experimental Cancer in White Mice.—The white mouse reacts to tar treatment of its skin by developing a skin cancer in from eight to ten months. This is usually preceded by the appearance of a papilloma five to seven months after the beginning of the treatment. It is sufficient to rub the tar in three times weekly for a period of six months. The effect of tar when applied to the rectal mucosa was to produce degeneration, whereas in the anal area it produced cancer. Apparently tar does not act as a cancerogenic agent in the case of cylindrical epithelium. The effect of tar upon the

connective tissue was to produce an inflammatory reaction, transformation into sarcoma did not take place. The authors come to the conclusion that tar cancer represents a complicated biologic reaction having for its physiologic prototype regeneration which, because of new and unusual conditions, is converted in its final form into a malignant growth having the power to infiltrate and to metastasize. They further conclude that this reaction is not a local disease of the skin but a diseased state of the entire organism, manifesting itself through a complicated reaction of the skin as a whole. Apparently, the constitution of the animal is a factor of great importance in the cancer problem.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

71: 1361-1500 (Oct. 1) 1927. Partial Index

Blood Group Terminology. H. Aldershoff.—p. 1365.
Disturbances of Personality. C. T. van Valkenburg.—p. 1368.
*Rare Lesion of Tendon. T. S. Klots.—p. 1382.

Pseudotumor of Tendon.—Klots reports the case of a native of Java, aged 21, with a swelling on the volar surface of the right forearm, which had formed slowly during several years and had recently become painful. On examination an elastic swelling was found, situated between the tendons of the flexor carpi radialis and the ulnar tendon of the flexor digitalis sublimis. At operation a swelling of the tendon of the palmares longus was discovered. In view of the possibility of sarcoma, the diseased tendon was resected. On microscopic examination, the lesion was seen to be a chronic inflammatory process, not tuberculous.

71: 1501-1568 (Oct. 8) 1927

Goiter in the Netherlands. O. Lanz.—p. 1504.
*Spasm of Esophagus as Symptom. P. R. Michaël.—p. 1519.
*Retinitis in Nephritis. G. F. Rochat. Supplement.—p. 1569.
Typhoid in the Tropics. E. P. Snijders. Supplement.—p. 1589.

Spasm of Esophagus as Symptom.—In one of the two cases described by Michaël, esophageal spasm proved to be a symptom of tumor, in the other of ulcer, of the cardiac region of the stomach. The true condition was discovered at exploratory operation and necropsy, respectively.

Retinitis in Nephritis.—Rochat reviews the recent literature on this subject. Retinitis albuminurica is no longer, he says, considered an absolutely unfavorable prognostic sign in nephritis. In essential hypertension its appearance does not necessarily announce a change to malignant sclerosis. It may occur without renal insufficiency.

Acta Medica Scandinavica, Stockholm

67: 1-183 (Oct. 8) 1927

Extrasystole as Sign of Interference in Many Heart Rhythms. E. Zander.—p. 1.
*Resting Minute Volume of Heart During Recurrent Fever. H. Bjerlöw and G. Liljestrand.—p. 5. In English.
*Diabetes Mellitus with Unusual Remission. Y. Åkerrén.—p. 14.
*Cutis Verticis Gyrata as Part of Endocrine Syndrome. A. Grönberg.—p. 24. In English.
*Scurvy in Men Living Alone. E. Meulengracht.—p. 43.
Physical Nature of Sedimentation of Blood Corpuscles. R. Lundgren.—p. 63. In English.
Blood Changes in Relapsing Fever. G. Höglund.—p. 105.
*Effect of Sprue Diet in Pernicious Anemia and Other Severe Anemias. C. Elders.—p. 166. In English.
Agranulocytosis. A. Zetterqvist.—p. 172.

Resting Minute Volume of Heart During Recurrent Fever.—In four patients, ill with recurrent fever, the minute volume of the heart during rest and the basal metabolism were determined by Bjerlöw and Liljestrand at different rectal temperatures. The basal metabolism showed a typical rise with rise of temperature. The utilization of the oxygen of the blood remained constant during periods of normal and of elevated temperature. There was, thus, during fever a rise in the minute volume of the heart in direct proportion to the rise in oxygen consumption. The output per beat remained unaltered or was diminished.

Diabetes Mellitus with Unusual Remission.—Åkerrén reports a case of diabetes mellitus with very acute onset in a man, aged 46. On the first examination, made five hours after eating, the blood sugar was 0.30 per cent; fifteen hours later it was 0.19 per cent. This percentage was maintained for twenty-four hours. Under dietary regimen, without insulin, the blood sugar curve rapidly returned to normal. During the first few days of illness ketonuria was present, and during the first two weeks, urobilinuria. In spite of a return to the usual diet, with a large amount of carbohdrate, the fasting sugar curve was normal after two and a half years. There was no sugar in the urine. Evidently, there was a complete remission.

Parallel Folds of Scalp as Part of Endocrine Syndrome.—Grönberg's patient had marked hypertrophy of the skin of the face and scalp with well marked folds, deep and permanent. The skin was very greasy and covered with furuncles and comedoes. The folds in the scalp gave the impression of gyrus formations in the brain. The facial aspect was that of facies leontina in epilepsy. There was also some hyperplasia of the long bones. In this as in other similar cases there was an absence of the enlargement of the sella turcica which is typical of acromegaly in general. Grönberg regards the case as being unique.

Scurvy in Men Living Alone.—The cause of the scurvy in these cases was the diet, of course; but the reason for the improper diet was a distaste of the men for restaurant food and the consequent habit of eating in their rooms and partaking habitually of bread and butter and farina with coffee. Meat was eaten seldom, fruits and vegetables, never.

Sprue Diet in Pernicious Anemia.—Elders' experience with the dietetic treatment of pernicious anemia and other anemias leads him to suggest that a great many cases of anemia which are rebellious to treatment are deficiency diseases, which can be improved and probably cured as well as prevented by diet. He gives a diet rich in animal proteins and in vitamins. It contains meat, milk, yolks of eggs, cod liver oil, liver and fruit such as tomatoes and oranges.

Hygiea, Stockholm

89: 737-768 (Oct. 15) 1927

*Oculocardiac Reflex. C. E. Ljungström.—p. 737.
Ability of Bacteria to Reduce Methylene Blue. C. W. Lungquist and G. Rylander.—p. 750.

Oculocardiac Reflex.—Ljungström made 238 tests of the oculocardiac reflex (105 on the fasting stomach, thirty-nine without reference to meals or time of day, ninety-four after injection of drugs). He states that the most important and almost the only positive result was the change in pulse frequency under ocular compression and its possible marked intensity. The change seemed dependent on the strength and duration of the pressure. The results sometimes varied greatly in the same person even under similar conditions. Meals and rest apparently played no part. The oculocardiac reflex was observed in healthy persons and there was no characteristic type for different disorders or for so-called vagotonic or sympathicotonic persons. The investigations indicated that ocular bradycardia is not wholly a psychic phenomenon but is dependent on organic conditions. That tachycardia, on the contrary, may be of emotive origin was not excluded.

Svenska Läkaresällskapets Handlingar, Stockholm

53: 209-272, 1927

Distribution of Vital Dyes in Organism. N. Anitschkow.—p. 209.
*Treatment of Acute Osteomyelitis. S. Johansson.—p. 217.
Inguinal Lymphogranuloma. S. Hellerström.—p. 241.
Gonioscopic Study of Anterior Peripheral Synechiae in Primary Glaucoma. T. Thorburn.—p. 252. In English.

Treatment of Acute Osteomyelitis.—As normal procedure in acute septic osteomyelitis, Johansson advocates radical excision of the affected bone marrow, with special attention, particularly in the long bones, to the metaphyses, where the primary focus is usually found. The soft parts should as far as possible be sutured, and instead of tamponade he advises irrigation with a suitable disinfectant. Clinically mild cases may recover after simple chiseling and suture. With localization near vital organs, as the cerebrum or medulla, early radical intervention is absolutely necessary. In the short and in certain long bones (radius, ulna, fibula) early subperiostal resection with suture gives the quickest results. Simple incision (or puncture) alone may be a safe method in certain mild cases, especially in the very young;

however, évidement is indicated if the general symptoms do not quickly recede. Autovaccination seems useful, in particular with operative treatment, but in his opinion further experience and probably also improved technic are desirable.

Ugeskrift for Læger, Copenhagen

89: 947-974 (Oct. 20) 1927

Etiology and Serum Treatment of Scarlet Fever. M. S. Andersen.—p. 947.
*Diabetes Mellitus in Early Life. E. Lenstrup.—p. 954.
*Hypertrophy of Tonsils in School Children. P. Hertz.—p. 957.

Diabetes Mellitus in Early Life.—Lenstrup has to date successfully treated four children, aged, respectively, 11 months, 22 months, 3 years, and 3½ years at the beginning of treatment. The treatment is based on the idea of making their lives as tolerable as possible, the diet, because of the rôle food plays in young children's lives, conforming as nearly as can be to that of other children of like age, and insulin injections limited to as few as possible, preferably only one daily. While normal blood sugar level and absence of sugar in the urine are not constant, they are closely approached. The graver cases require greater care in diet and increasing doses of insulin; here he warns of the danger of coma on one hand and insulin intoxication on the other. He sees in young children less danger of coma than of hypoglycemia. Two dangers, infections and dependence on insulin administration, seem to him probably greater in early life than later, the second because young children cannot "speak up" if the insulin dosage is wrong.

Hypertrophy of Tonsils in School Children.—Hertz's examinations of 1,185 school children disclosed tonsillar hypertrophy in about 13 per cent. Fully 33 per cent of the children with hypertrophy had adenoid growths. The hypertrophy of the tonsils present at 6 or 7 years often disappeared or decreased during the first school years. Most children with hypertrophy of the tonsils in later school years were neither physically nor mentally below the average and seemed no more susceptible to illness than normal children.

89: 975-998 (Oct. 27) 1927

*Results of Resection in Cancer of Stomach. A. Pers.—p. 975.
Etiology and Serum Therapy of Scarlet Fever. V. Bie, A. Larsen and M. S. Andersen.—p. 981.
Early Symptoms in Paratyphoid B Infection. H. Nielsen.—p. 986.
Technic of Injection Treatment of Varices. G. Jensen.—p. 988.

Results of Resection in Cancer of Stomach.—Since 1904 Pers has used resection as the normal method in gastric cancer. In every one of his twenty-nine cases the diagnosis of cancer was confirmed by microscopic examination of the tumor. In twenty-eight he used Billroth II. Technic, indications, history, follow-up examination, and results of treatment are briefly described. The operative mortality was 35 per cent, definite recovery followed in three cases, the patients having lived thirteen and one-half, nineteen and one-half and twenty-two and one-half years, respectively, after operation; the first two are still living.

Upsala Läkareförenings Förhandlingar, Upsala

33: 1-269 (Sept. 20) 1927

*Abnormal Static Circulatory Phenomena: Arterial Orthostatic Anemia. A. Bjure and H. Laurell.—p. 1..
*Somatic Conditions in Manic Depressive Psychosis. T. Sondén.—p. 25. In English.

Abnormal Static Circulatory Phenomena and Related Symptoms: Arterial Orthostatic Anemia, a Neglected Picture.—From clinical and roentgenologic examinations of asthmatic patients with general and local disturbances, Bjure and Laurell conclude that these are largely to be explained as signs of a circulatory disorder, defined as an arterial orthostatic anemia. In this preliminary report they describe the marked static changes in pulse together with other typical symptoms suggesting arterial anemia, the roentgenograms, in which the heart shows also abnormally marked static changes in volume and in part an abnormal pulsation type in the erect position, and the changes found in minute volume. While unable to establish the cause of the abnormal distribution of blood in orthostatic anemia, they point to factors likely to dispose to it. They consider the disturbance a factor in the localization of tuberculosis in the apices of the lungs and also in the origin of orthostatic albuminuria. Rest in bed is recommended, with general building-up treatment to increase muscular strength and weight.

Study of Somatic Conditions in Manic Depressive Psychosis.—Sondén's material comprises eleven cases studied for varying lengths of time, four for over two and a half years. After describing the psychic condition of the patients examined, he reviews the literature and discusses his own investigations on the following points in their relation to manic depressive psychosis: temperature, pulse rate and blood pressure, respiratory rate, erythrocytes and hemoglobin, leukocytes, the albumin content of the blood serum, the blood sugar, the quantity of nonprotein nitrogen, urea nitrogen, preformed and total creatinine in the blood, and the vegetative nervous system (effect of epinephrine on the blood pressure, the oculocardiac reflex, and Loewi's reaction). He concludes with the pathogenesis of the disorder. He found no physical phenomenon occurring regularly in any certain psychic state in all patients. The number of leukocytes, particularly neutrophils, seemed greater during mania. In some cases a slight rise of temperature and a not inconsiderable rise of pulse rate was found during the manic period. The blood pressure often followed the psychic variations remarkably well, being higher in mania and depression. Examination of the number of erythrocytes yielded the most valuable results, which apparently justify the conclusion that at least in one group of manic depression there is a rise in the erythrocyte figure in mania and depression. He is inclined to interpret the variations in blood pressure and the fluid quantity of the blood as coordinated with the psychic symptoms, and to connect manic-depressive psychosis with changes in the endocrine as well as in the nervous system. While he regards hereditary disposition as the true basis of the disorder, therapy which influences the endocrine organs and the nervous system seems to him worth trying. (This article, which is in English, is followed by twenty-one pages of bibliography, also thirty-six pages of tables and twenty-five of charts.)

33: 271-369 (Oct. 10) 1927

"Morphologic Review on Myogenic Innervation of Heart in Vertebrates." E. Agduhr.—p. 271.
Disappearance of Epinephrine from Circulating Blood. C. G. Sundberg. —p. 301.
Action of Hydrazine, Hydroxylamine, and Amidoguanidine on Elimination of Uric Acid. N. Nielsen and G. E. Widmark.—p. 327
Injury to Eye in So-Called Marsjö Fight. J. W. Nordenson.—p. 335.
*Simplified Method for Making Finger Prints. E. D. Schött.—p. 347.
*Possible Dangers in Lipiodol Instillation into Air Passages. C. Grill. —p. 355.

New Simplified Method for Making Finger Prints.—As the use of printer's ink frightened his Lapp subjects, Schött developed a photographic method of making finger prints, following the usual procedure but substituting lanolin for the ink and photographer's developing paper, films, or plates for the paper. He describes his technic.

Possible Dangers in Lipiodol Instillation into Air Passages.—Grill records a clinically uncertain case (chronic pulmonary abscesses?) with acute fatal aggravation, attributed by him to the intervention, one week after the introduction of lipiodol into the lungs for diagnostic purposes. He discusses the possible dangers from the injection of lipiodol into the air passages, with special reference to the danger of infection.

CORRECTION

Injection Treatment of Varicose Veins.—Dr. E. C. Mansur, author of a paper entitled "Injection Treatment of Varicose Veins," published in the *Journal of the Missouri State Medical Association* **24:**469 (Oct.) 1927, and abstracted in THE JOURNAL, November 26, p. 1904, asks that the statement of his method be corrected as follows: Put on a tourniquet well above the place to be treated. I use and prefer for all such work the usual Tycos blood pressure band. Pump this up to about 100 mm., which pressure will be found to distend the veins below nicely. Fill a 5 cc. syringe, fitted with a small needle, with 18 per cent sodium salicylate solution. The needle is inserted into the smallest and most distal branch of the vein to be treated and the solution injected slowly, one minute being about proper.

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THE PROBLEM OF EXERCISE FOR CHILDREN WITH HEART DISEASE *

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From the standpoint of management, few phases of cardiac disease in children cause such concern as the attitude to be adopted toward exercise. Although this subject has received much attention in relation to adults, little has been presented concerning children, and the great differences that exist between this disease in the adult and in the child make a separate and distinct consideration of the latter necessary. Among physicians generally opinions differ greatly, and in hospitals and clinics the policies in operation vary widely. Undoubtedly this is due to the lack of a uniform conception of the disease and to the absence of an exact or wholly acceptable measure of circulatory strain. It may also be due in part to the difficulty of presenting objective evidence and the lack of ease with which the subject lends itself to graphic demonstration. Nevertheless there exist large numbers of children with disease of the heart, and their care must be based on some acceptable underlying principles.

The heart may be diseased and yet maintain normal function, or its function may be impaired in any degree between slightly below normal and that scarcely sufficient to meet the circulatory needs when the patient is at rest in bed. The milder degrees have been spoken of as "poor compensation" and the more severe as "decompensation." All are in reality some degree of heart failure. The question of exercise is deeply concerned with the nature of heart failure, and it is believed that the type of management selected will depend on the conception adopted. For many years, the altered mechanics present in a heart whose valves have been injured or destroyed have dominated the attitude toward heart failure. The valvular defects have been looked on as the chief underlying causes of the diminished heart function when the musculature by enlargement or increase in power was unable to meet the extra demands placed on it. The onset of heart failure has been attributed chiefly to excessive physical exertion. Regardless of what may still be the prevailing opinion in relation to the disease in adults, I doubt gravely whether such a conception holds true for children. I believe that there is another attitude which is far more likely to lead to a better understanding of the processes present and therefore to a more enlightened type of management.

THE NATURE OF CARDIAC FAILURE IN CHILDREN (DECOMPENSATION)

Rheumatic infection is by all means the chief, if not the sole, important cause of acquired cardiac disease in children. The lesions in the heart may be large or small and they may involve any or all of the structures in any combination. The great majority of cases do not show any symptoms whatever. When symptoms are present they may vary widely in degree. However, there is no relation between the presence, absence or degree of the symptoms and the site, the extent or the type of the anatomic lesion. This difference in the degree of the symptoms and the change in the clinical picture produced is due chiefly to the alteration of the heart's functional capacity, which may vary within wide limits. That this impairment of cardiac function is dependent on the extent of the lesion seems unlikely from the fact that patients with good reason supposed to have minor lesions are often seen desperately ill with heart failure (decompensation), while others known to have extensively diseased hearts are able to undergo the exertions of normal children without any greater circulatory reaction. That the site of the lesion has little bearing on the function of the heart may be deduced from the facts that in some cases function may be the same though the lesions are totally different, while in others, with the same area of the heart involved, the function may vary widely. As to the type of the lesion, insufficiency, stenosis, enlargement, adherent pericardium, any one or any combination, may be seen, together with all degrees of functional capacity between that slightly below normal and severe failure. That the altered mechanism of the valves cannot be fundamental is proved by the fact that children are seen with severe heart failure who present no demonstrable valvular lesion. Also, in cases presenting definite valvular defects, though the valves remain unchanged, the children may go from normal functional capacity through cardiac failure and return again to a normal reaction. That physical exertion cannot be the underlying factor is made almost certain by the experience gained at the St. Luke's clinic during the past twelve years. The onset of cardiac failure as a result of physical exertion in the absence of other factors has never been observed in spite of the fact that 95 per cent of the children lead normal lives and pursue the physical activities normal for their ages. To be sure, it cannot be denied that in the presence of other factors and impending cardiac failure, physical exertion might hasten its advent and appear as the all important cause.

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* Read before the Section on Diseases of Children at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 18, 1927.

Careful study of the cases will, however, almost invariably show the presence of another factor and that factor is infection.

Fever is practically always present in cardiac failure in childhood; observation of many cases will prove its absence to be rare. At the beginning of an attack, the fever is definite and varies daily between 100 and 104 F. As the attack progresses, it tends to become lower, and often toward the end it reaches a daily peak only a fraction of a degree above 99.6. It may not be present every day; in fact, several days may elapse between these peaks; but as long as the disease is active, these abnormal peaks will continue to recur. The duration of an attack may vary from a few weeks to many months. As long as fever persists, though the symptoms may fluctuate in severity, the children never recover. Mild or severe, the condition remains until the temperature returns to normal and remains within normal limits for at least ten consecutive days. When this has occurred, these children rarely fail to recover promptly.

In view of the almost universal presence of fever in cardiac failure, it is difficult to evade the conception that the condition is one of infection. To be sure, fever in a child with heart disease may be due to any of the conditions that cause fever in a child without heart disease. Added to these, abnormal temperature in a child with heart disease may be due to an active inflammatory lesion in the heart. At times this can be demonstrated with reasonable certainty as, for example, by the presence of a pericardial friction rub which bespeaks recent inflammatory exudate. Also, during a febrile period, the appearance of a new lesion such as an aortic or mitral insufficiency (not stenosis [1]) may serve to center the focus. Similarly, changes in the electrocardiogram may be understood to denote the presence of an active inflammatory process or Aschoff bodies in the heart. The examination of diseased hearts after death will often serve to show how impossible by any known means it is to state definitely before death that active infection is present. Reference is made to very small patches of pericarditis or areas of inflammatory tissue lining the cavities or at the base of the valves. By no known method could they be demonstrated clinically. Nevertheless, they are definite foci of infection and could well have accounted for the so-called unexplained elevation of temperature that had existed before death. So it happens that while occasionally an active focus of infection in the heart may be proved to be there, far more often the belief that it is there must be deduced from the inability, after careful search, to find it elsewhere in the body.

For these reasons, cardiac failure in children is believed to be due to an active infection in the heart. It is also believed that the only mechanical effect that exists is that due to the diminished functional capacity of actively inflamed heart muscle. Further, it is felt that it is the activity or inactivity of the inflammatory lesion that dominates the clinical picture of the case. When the lesion is active, the function is impaired; there is fever, leukocytosis, dyspnea, palpitation, tachycardia or edema. When the lesion enters the inactive, dormant or healed stage, these symptoms disappear and the functional capacity increases and reaches normal. At this time the children enjoy perfect well being and are able to pursue normal physical activities. A comparable situation exists in tuberculosis of the lungs. When the disease is active, there is fever, weight loss, anemia, cough, sputum and hemorrhage. When it is inactive, these symptoms disappear, although the lung may have been injured permanently and still remain the site of a dormant lesion. The tendency to recurrence of active infection in the heart is very great. This may be the result of a new infection or the flaring into activity of a lesion dormant rather than healed, although experience would seem to teach that at times actual healing did occur.

Very occasionally an afebrile child may suffer from cardiac failure. In such instances, there is likely to be extensive change in the heart, such as great enlargement, adherent pericardium, marked valvular defects, and disturbances in rhythm (fibrillation). Almost always such hearts have been repeatedly reinfected, and the inflammatory lesion has been widely distributed and of very long standing. It may be that the diminished functional capacity is due to serious degeneration of the muscle fibers. In this connection, it is interesting to note that active and spreading tuberculosis of the lungs has been described as existing with an almost normal temperature.[2]

Because the great importance of fever in this connection cannot be overestimated, it is perhaps wise to state specifically when it is thought to be present. It is considered to exist when the rectal temperature of a child at rest rises above 99.6 F. As the temperature varies throughout the twenty-four hours, it is necessary to make observations at regular intervals in order that the high peak may not be missed. Because moderate physical exertion will cause appreciable elevations and lead to confusion with abnormal fever, it is imperative that the child be at rest for at least one-half hour before the observation is made. If the decision to be made is an important one, complete rest in bed throughout the day will give an even more trustworthy record. There may be disagreement with the degree of temperature here stated beyond which fever is considered to exist. To be sure, there is no exact standard. The figure of 99.6 F. as the upper limit of the normal temperature of a child at rest was arrived at after observation of many children of all ages, clinically free from infectious illnesses and at rest in bed. Comparable observations in relation to tuberculosis have led to the adoption of similar standards.[2]

EXERCISE TOLERANCE

At the conclusion of an attack of heart failure in a child, the temperature remains normal, the function of the heart improves and the symptoms and signs of the condition spoken of as decompensation disappear. The function continues to improve rapidly, and before many weeks most patients are able to pursue the activities of normal children without excessive circulatory reaction in terms of dyspnea, palpitation and tachycardia. They may be said then to tolerate exercise normally, or in other words to possess a normal exercise tolerance. Left to their own devices, about 75 per cent of children who recover from an attack of heart failure will return to a normal functional capacity. The remaining 25 per cent, although usually much improved, will continue to exhibit an exercise tolerance of varying degrees below normal. Thus, from the standpoint of functional capacity, children with cardiac involvement tend to divide themselves into three groups: [3]

1. St. Lawrence, William: Potential Cardiac Disease and Prevention of Organic Heart Disease in Children, J. A. M. A. **78**: 947 (April 1) 1922.

2. Goodwin, C. G. R.: The Bodily Temperature in Health and in Pulmonary Tuberculosis, Tubercle **4**: 529 (Sept.) 1923.

3. St. Lawrence, William: A Clinical Classification of Heart Disease, Arch. Pediat. **34**: 308, 1917.

Class 1: Those with a normal exercise tolerance who are able to pursue the physical activities of normal children with no greater circulatory reaction.

Class 2: Those with a diminished exercise tolerance who suffer from excessive circulatory reaction for the work performed.

Class 3: Those with severe cardiac failure (decompensation) whose hearts are unable efficiently to meet the circulatory needs at rest in bed and hence have no exercise tolerance.

MANAGEMENT

This paper is not concerned with the management of cardiac failure which must, of course, have come to a close before exercise is to be considered. In the past, it has been difficult to determine the exact time at which the activity of the infection subsided, and therefore there have been no definite indications for the resumption of physical activities. If the temperature curves in many cases are studied, it will be noted that the fever tends to become lower and lower and after a time peaks of fever over 99.6 F. occur only at intervals of a few days. Eventually, the temperature will not rise above this point more frequently than might be experienced in any normal child. When it has not risen above 99.6 F. for ten consecutive days, the attack may be assumed to have come to a close. Occasionally there will be an immediate recrudescence, but in about 90 per cent of the cases there will be no recurrence of fever or other evidence of active heart infection. The reduction in the pulse rate, disappearance of lekocytosis and absence of significant changes in the electrocardiogram will give confirmatory information.

In the past, little attention has been paid to fever as an indication that the phase of active disease has come to a close. Children with heart disease have been allowed out of bed to undergo increasing exertion, or have been discharged from the hospital to unsupervised care at home while appreciable degrees of fever were present. At other times, children with heart failure are kept at rest in bed long after the active phase has come to a close, as if long periods of rest were necessary for the recovery of heart function. Experience has proved this unnecessary. The temperature as an indication for the institution of exertion has been found to be trustworthy indeed. It provides a simple and readily accessible means of determining when active cardiac infection, and therefore cardiac failure, has come to an end. On the other hand, minor degrees of temperature may occur every few days for very long periods. Patients have been observed who did not have ten consecutive days with normal temperature for more than eighteen months. It is important to remember that fever in a child with heart disease not explained by a definite focus of active infection elsewhere in the body must be attributed to a focus in the heart, even though it may not be possible to demonstrate it. After the temperature has remained normal for ten consecutive days, in almost all instances rapid headway may be made. At first these children may be treated much as convalescent patients from any severe infection, being allowed increasing periods out of bed and later, beginning with a few steps, more and more exertion until they can go about the ward or bedroom with ease.

The period required for such recovery of the heart function does not seem to be any greater in cardiac disease than in pneumonia, typhoid or any other serious or prolonged infection, and this seems to be true regardless of the duration of the active phase. The exercise tolerance tends to increase rapidly until considerable exertion is possible, and in one or two weeks these children are able to walk up one flight of stairs without excessive circulatory reaction. At this time, these children are made to perform exercises before the physician, such as swinging flat-irons or dumb-bells or climbing stairs. By the circulatory reaction, the physician may determine the amount of work that can be performed without excessive strain. The children are then instructed to perform this exercise many times throughout the day with rest periods between. Also, they are urged to note the degree of dyspnea produced so that in the course of their daily lives they may not exceed this point. After a few days, the child is able to perform this first exercise with a lessened circulatory reaction. Then the exercise is increased and, as rapidly as the child will respond, he is made to raise his exercise tolerance until it is normal. With continued inactivity of the cardiac lesion, as shown by the sustained normal temperature, children with heart disease return to a normal functional capacity, permitting of the games and sports of normal childhood in a very few weeks. Should cardiac infection or intercurrent infection distal to the heart occur, the prompt reduction in the exercise tolerance will provide a protective mechanism. The children are therefore cautioned that should there be excessive reaction on exertion, they must cease all activities and report at once for examination.

Children seek their exercise peak and operate at it continuously, as differentiated from adults who do not seek their exercise peak and usually operate far below it. As exercise develops skeletal muscle, so also it increases circulatory capacity, and when applied steadily in increasing amounts the process is called "training." As this pushing up of exercise tolerance is the result of a normal mental attitude, the child with heart disease responds in the same manner as normal children. Thus, left to their own devices, whether we will or nay, children with cardiac involvement will raise their exercise tolerance as high as it will go, and they will do so as fast as their individual responses will permit. Thus, responding to this normal impulse, about 75 per cent of children with cardiac disease will return to a normal exercise tolerance.

It would appear that the fact must be accepted that a child with heart disease will do all that he can. It may at times be wise to direct or curtail his exertion but it is rarely necessary to prescribe it. In 1919 a class for graduated exercise was instituted at the St. Luke's Clinic. After two years it was discontinued. It was found that unlike adults, children did not have to be urged to pursue exertion. The period spent in the class was a relatively small part of the child's time; the graduation and restraint of the class were overshadowed by the far greater period during which a child operated according to natural impulses. If a child with heart disease has been able to provide a normal exercise tolerance for himself, the question arises as to whether we have good reason for restraint. It should be remembered that it is as important not to limit activities when they might be performed without harm as to allow them when they might be dangerous. Experience alone can give the answer to this question. For about eleven or twelve years, the policy of allowing full freedom in all physical activities including games and sports for children in class 1 has been in force at the St. Luke's Clinic. These children are permitted all types of exertion until they become conscious of moderate dyspnea and heart beating. They are instructed

not to pursue their activities beyond this point. As they do not suffer dyspnea sooner than their playmates, it follows that they enter into all such sports as football, baseball, basketball, running and jumping. Selected patients are allowed to compete in athletic contests with normal children of their age, and several of them have medals for such events as the 80 yard dash, high jump and broad jump, which have been won in competition with their normal playmates. To be sure, great care is used in selection for such events. It is well understood that competitive sport is likely to carry a child beyond a point at which he might otherwise cease. While it might seem that this would lead to overstrain, such has not been observed to be the case. If full freedom in physical activity can do harm to the average child in class 1, this fact should have made itself known. Yet it can be stated without reservation that the observers at this clinic have never seen physical exertion, in the absence of infection, account for the onset of cardiac failure in a case in class 1. At first great caution was used, and there was much hesitation in allowing or urging the usual games and sports of normal children except in patients with the mildest anatomic lesions. However, the absence of bad results and the general improvement obtained invited greater liberties, and for many years all class 1 children have been urged to pursue normal lives. The conclusion has been reached that exercise can do no harm to such hearts. Cases of sudden death following exertion have never been observed.

Patients in class 2 (diminished exercise tolerance) present a more interesting and difficult problem. Left to their own devices, about 25 per cent of children with cardiac involvement on so-called recovery from severe cardiac infection will continue to exhibit an excessive circulatory reaction to exertion. This impairment of functional capacity may vary from only slightly below normal to a point at which the mildest exertion will produce dyspnea. More often it is not severe. The reduction in exercise tolerance may be due to many factors. It must be remembered that the exercise tolerance of children without heart disease may be diminished and that the same causative factors may be present in a child with heart disease. It follows, then, that the diminished exercise tolerance of a child with cardiac disease may not always be due to conditions in the heart. It may be diminished in those children of abnormal mental attitude who do not seek exertion (the lazy child). It may also be found below normal in overweight children, although at times this may be more seeming than real when the extra amount of work performed by such children is considered. "Softness," as a result of restraint, may also be a cause. This is not uncommon, for in the past exertion has been feared and therefore curtailed. Many such children with cardiac disease may be seen, and at first the decision cannot be made as to whether they are soft from lack of training or have been reduced by the cardiac condition. If they are afebrile, systematic exercise will as a rule prove the former to be the case. Anemic and undernourished children may also be found in this group. Also, it is not unreasonable to believe that factors which produce the "effort syndrome" might exist in the presence of organic disease of the heart. Toxic states, such as hyperthyroidism, probably produce similar effects, although they are uncommon in childhood.

Infection is probably more frequent and more important than any of these causes. It may be extracardiac or in the heart itself. Children suffer commonly from alveolar abscesses, acute and recurrent bronchitis, tonsillitis or chronic constipation. Perhaps the most common of these is chronic tonsillar infection. Such extracardiac infections are likely to have a particularly marked effect on the exercise tolerance of children with heart disease.

It will appear at once that the first step in the management of cases in class 2 will be the recognition of the cause of the diminished functional capacity. If found to be extracardiac, and among such conditions as those enumerated, the institution of the proper measure of management will cause most of these children to revert promptly to class 1. It is often amazing what may be accomplished by the eradication of physical defects and foci of infection and by the institution of proper diet and hygiene.[4] When children have been made physically fit, the increased desire for exertion elevates the exercise tolerance automatically, and there will remain only a few children in class 2, perhaps not more than 4 or 5 per cent of those enrolled in the cardiac clinic.

The persistent reduction of the exercise tolerance in this small group is due to two causes. By far the greater number suffer from active low grade cardiac infection. In reality, these are cases of mild heart failure (decompensation). They will always present fever which may not be high nor present every day. It may not reach or exceed 100 F. under the standard conditions given more often than two or three times a week. It will last as long as the active infection is present, and this may vary from days to years. Recovery may not be expected until the active process has subsided and the fever has disappeared. When this has taken place, these children make a speedy recovery with a rapid improvement in the function of the heart. In reducing the exercise tolerance in these cases, nature makes the child conscious of its heart by the early appearance of dyspnea, tachycardia and palpitation. It would appear that these evidences that the heart is under stress occur as a protective mechanism to make harmful pursuits unpleasant and to invite rest. Of course, exercise is out of the question for such children. They should be put to bed at absolute rest until the activity of the process has subsided.

When those cases showing a reduction in exercise tolerance as a result of active cardiac infection have been eliminated from class 2, as well as those which are due to factors that might occur in any child without heart disease, there remains a very small group which at any one time will probably not exceed 1 or 2 per cent of the children in the average clinic—namely, the afebrile patients with extensively injured hearts. As a rule, these hearts have suffered repeated reinfections and long periods of active disease. They usually present evidence of great enlargement, adherent pericardium, marked valvular defects or disturbances in rhythm. As the nature and extent of the lesion bespeak disease of long standing, such cases are more likely to occur in older children. Digitalis may improve slightly the functional capacity of these hearts, but as a rule it continues to be below normal and cannot be further raised by any known means. The lives of these children must be regulated accordingly. However, the prognosis is very serious, and such children live only a relatively short time.

983 Park Avenue.

4. St. Lawrence, William; and Adams, E. Louise: **The Organized Care of Cardiac Children**, Hospital Social Service, May, 1920, p. 151.

INCIDENCE OF RHEUMATISM, CHOREA AND HEART DISEASE IN TONSILLECTOMIZED CHILDREN

A CONTROL STUDY *

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The great problems in the control of heart disease in children are the determination of the unknown factors in etiology and the methods of prevention of chorea, rheumatic fever and other infections which are generally assumed to be present before the heart valves are involved.

Carditis frequently follows scarlet fever, chorea and rheumatic fever. Frequent attacks of sore throat may precede these infections, so that the tonsils are in many instances looked on as the portal of entry and perhaps a factor in their occurrence. In view of the serious and chronic nature of rheumatic heart disease and the relative ease with which the tonsils can be removed, it seems extremely important to establish a relationship between these symptoms and the tonsils. With the increasing number of tonsillectomized children in a community, the incidence of the rheumatic manifestations can be observed in a large group in whom operation has been performed as well as in children who have not been operated on.

There have been conflicting opinions as to the influence of the tonsils on the various rheumatic symptoms. The studies of Ingerman and Wilson,[1] based on 185 children with rheumatic fever, showed that the recurrences of rheumatic fever in children who had been operated on were as frequent as in the control group in which the children had not been operated on. Hunt,[2] in a study of 144 cases of acute rheumatic fever in children at Guy's Hospital, London, found recurrences in 53 per cent of sixty-six cases in which complete enucleation of the tonsils was performed, and in 42 per cent of the seventy-eight cases in which operation had not been done. On the other hand, St. Lawrence [3] found in a study of eighty-five tonsillectomies that only 16 per cent of the rheumatic patients had a return of the acute condition, while 50 per cent of those with chorea showed renewed evidence of this condition. Mackie,[4] in a recent critical study, concluded that tonsillectomy performed following an acute attack of rheumatism seems to reduce but not to remove the incidence of recurrences. Very few observations have been reported in children operated on before the appearance of rheumatism and heart disease.

The query in the mind of the practitioner today is whether enucleation of the tonsils will safeguard the child against rheumatic fever, chorea and heart disease if these infections are not already present. Also, if they are present, will the same operation offer any assurance that recurrence can be prevented? This study attempts to give a reply to these problems. It seemed necessary to observe a large group of children in whom the tonsils had been removed before any rheumatic symptoms were manifest. This group must be kept under observation for a period of at least five years following operation to determine whether any rheumatic symptoms develop during this time. A like group in whom the tonsils are not removed but in whom the exposures and environment are the same must also be followed for a period of at least five years. The occurrence of infections and the physical examinations in these two groups will offer an opportunity for comparison which may help solve the query.

During the years 1919 to 1921, about 15,000 school children in Rochester were tonsillectomized in special clinics where a complete history and record of the physical condition was kept on file. About 5,000 children had their tonsils removed by their own physicians during this period. The operation was advised for many more school children, but for various reasons was not performed. They were, however, examined and are now used for controls in the follow-up study of the children who were operated on. Follow-up studies were made on many of the tonsillectomized and control group, one year and three years after operation, to determine the effect of the operation on the general health of the child. These results showed the immediate effect of the tonsil removal on a large number of controlled children. The group that had been operated on showed a decided lessened incidence in upper respiratory infections, notably attacks of sore throat. The three year period seemed too short to determine the effect of the tonsil removal on rheumatism, chorea and heart disease. Now that a period of from five to eight years has elapsed since the operation, the rheumatic manifestations in the two groups are studied.

TABLE 1.—*Incidence of Rheumatic Infections in Forty-Eight Thousand School Children, Based on the History Obtained from the Parents*

	Tonsils Removed, 20,000				Tonsils Not Removed, 28,000			
	Male	Female	Total No.	Per Cent	Male	Female	Total No.	Per Cent
Rheumatic fever.	204	195	399	1.9	410	466	876	3
Growing pains...	503	764	1,267	6.3	848	1,293	2,141	7.9
Chorea	36	49	85	0.4	75	87	162	0.5
Carditis	198	252	450	2.2	391	426	817	2.9
Scarlet fever....	741	783	1,524	7.6	2,134	2,441	4,575	16

The history of the child's infections emphasizing the rheumatic symptoms has been obtained in 48,000 school children. Many of those with a history of chorea, rheumatism or heart disease were subjected to a careful examination. A search was made for the focus of infection in both the tonsillectomized and nontonsillectomized children. Out of the 48,000 children, 20,000 had been tonsillectomized for a period of five years or more. In this group, the date of onset of the rheumatic manifestations was noted to determine whether they occurred before operation or subsequent to operation. Similar observations are made on the children who had not been subjected to operation. A comparison of the incidence of rheumatic infections in the two large groups may help to enlighten us as to the part the tonsils play in causing or preventing the so-called rheumatic syndrome.

It is generally assumed that valvular heart disease in children is preceded by some infection. The nature of this infection is not always clear. A chronological study of the infections in a large group of children may throw some light on the sequence of events that lead

* Read before the Section on Diseases of Children at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 18, 1927.

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2. Hunt, G. H.: Tonsillar and Rheumatic Infection, Guy's Hosp. Rep. **73**: 388, 1923.
3. St. Lawrence, William: The Effect of Tonsillectomy on the Recurrence of Acute Rheumatic Fever and Chorea, J. A. M. A. **75**: 1035 (Oct. 16) 1920.
4. Mackie, T. T.: Rheumatic Fever: An Analytical Study of Three Hundred and Ninety-Three Cases of Rheumatic Fever and Eighty-Nine Cases of Chorea, Am. J. M. Sc. **172**: 199 (Aug.) 1926.

to involvement of the heart valves. It is difficult at times to record accurately all the infections over a period of years. An attempt, however, has been made to ascertain the presence or absence of the following diseases or complaints: frequent sore throats, rheumatic fever, joint pains, growing or muscle pains, chorea, scarlet fever and heart disease. Whenever one or more of these diseases had existed, the time of infection was noted to determine whether it came before or after tonsil removal.

RHEUMATIC INFECTION

The study of rheumatic infection is one fraught with many difficulties because of the protean forms which it assumes. If one were to consider merely the classic cases of rheumatic fever the study would not be difficult, but signs of chronic valvular disease are found in children in whom no specific history of rheumatic fever or chorea is obtained. Indefinite joint pains, growing pains or the eruption of a cutaneous erythema may constitute the only rheumatic manifestations. In order to ascertain the significance of the milder symptoms as related to heart disease, they have been recorded. The history as obtained from the parent shows either that the child has had acute painful swelling of one or more

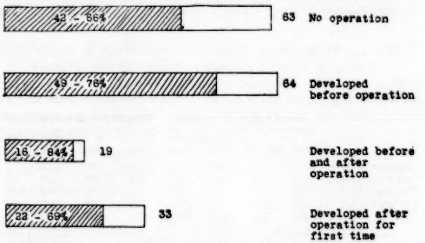
42 – 66%
63 No operation
49 – 76%
64 Developed before operation
16 – 84%
19 Developed before and after operation
23 – 69%
33 Developed after operation for first time

Chart 1.—Analysis of 160 cases of rheumatic fever with incidence of carditis. In charts 1 to 5 the shaded areas indicate cases of carditis.

joints with fever, which has been classified as rheumatic fever, or that there have been so-called joint pains, mild or severe, generally following an attack of sore throat. These pains usually occur without fever and seldom incapacitate the child. This type of complaint has been listed under "joint pains." A third type of rheumatic manifestations is the so-called growing or muscle pain. These pains either accompany an acute respiratory infection or occur alone. Their significance is not clear, but they have been listed whenever a history of them is obtained to determine whether they have any relation to the etiology of rheumatic carditis. Less common types of rheumatic infections were rheumatic nodes and cutaneous erythemas. They occurred so rarely in school children that little consideration need be given them. The history of rheumatic fever in the 48,000 children, and the examination of 1,200 children who manifested signs of rheumatism or heart disease, furnish the data for the rheumatic fever study.

There were 160 children examined who had acute rheumatic fever. Out of the 160 cases, 127 occurred before tonsil enucleation. Nineteen cases recurred after tonsillectomy, and thirty-three occurred for the first time after operation. The incidence of carditis following rheumatic fever ranged from 66 per cent in the nontonsillectomized group to 84 per cent in the cases that recurred after tonsillectomy. The incidence of carditis was high (69 per cent) in the rheumatic fever cases that occurred for the first time after tonsillectomy.

The second observation was made on 260 children complaining of joint pains. Out of 260 cases, 226 occurred before tonsil enucleation. Fifty-one children had recurrent attacks of joint pains following tonsillectomy, and in forty-four children joint pains were

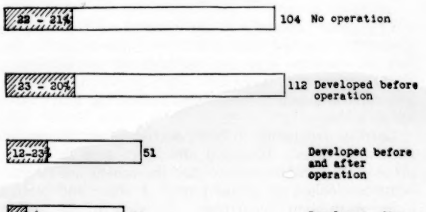

Chart 2.—Analysis of 260 cases of joint pains with incidence of carditis.

complained of for the first time subsequent to tonsil removal. The incidence of carditis in the patients complaining of joint pains was about 20 per cent, considerably less than in those with rheumatic fever.

In a similar way a grouping was made of 105 children who complained of growing pains. Eighty-nine of this number occurred before tonsil removal. There were forty-six children who continued to complain after tonsil removal, and sixteen complained of growing pains for the first time after the tonsil operation. The incidence of carditis was not great in this group.

Manifestly, it is difficult and perhaps unnecessary to draw a fine distinction between rheumatic fever, joint pains and growing pains. They may all be present in the same child, as was frequently the case. Grouped, they make up the general complaint in children called rheumatism. Considering them all as cases of rheumatism, I found that there were 525 children complaining of rheumatism or rheumatic manifestations. Out

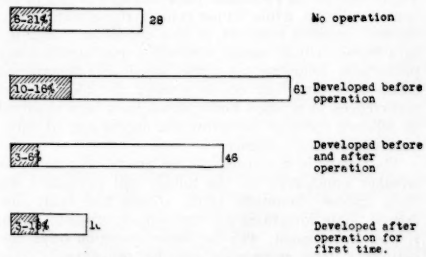

Chart 3.—Analysis of 105 cases of growing pains with incidence of carditis.

of that number, 432 had their symptoms before the tonsils were removed, and ninety-three children had their first complaint subsequent to operation. One hundred and sixteen children had recurrent attacks after tonsil enucleation. The incidence of rheumatic heart disease was 33 per cent, and was only slightly less in the children having rheumatic symptoms for the first time following tonsillectomy. Based on the rheumatic history of 48,000 children, it was found that rheumatic

fever occurred in 399 children whose tonsils had been removed and in 876 children in whom tonsillectomy had not been performed. The tonsillectomized group, however, represented 8,000 more children than the nontonsillectomized group. It is also certain that some children in the former group had had their attack of rheumatic fever before the tonsil removal, but in view of the uncertainty of the date have been included in that group. Reduced to a percentage basis, rheumatic fever occurred in 1.9 per cent of the children who were operated on, and in 3 per cent of those who were not operated on. Growing pains occurred in 6.3 per cent of the former group and in 7.9 per cent of the latter. A grouping of the rheumatic manifestations as obtained from the parents' history shows that in 48,000 children, those who were operated on (20,000) showed an incidence of 8 per cent of rheumatic symptoms, while the group in which operation was not performed (28,000) showed an incidence of 10 per cent. It is fair to conclude that the tonsils undoubtedly are a focus in many cases of rheumatic fever. Their removal offers considerable protection against recurrent attacks, and when the tonsils are removed before symptoms have developed, the chances for escaping rheumatic infection are appreciably increased.

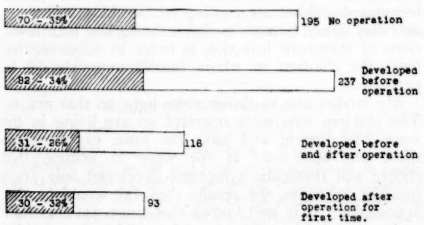

Chart 4.—Analysis of 525 cases of rheumatic fever, joint pains and growing pains, with incidence of carditis.

CHOREA

The relationship of the tonsils to chorea is judged from a study of 102 children who have had chorea. Of this number, thirty-seven were never operated on and sixty-five were operated on; but thirty-three of the sixty-five children had chorea before the tonsils were removed. There were fifteen children who had recurrent attacks of chorea after operation, and thirty-two who had had their first attack subsequent to tonsil enucleation. It is evident from these figures that chorea is as likely to occur in tonsillectomized as in nontonsillectomized children. It is interesting to note, however, that the incidence of carditis following chorea is considerably lessened in the cases occurring in children in whom the tonsils have been removed. In the historical survey made on 48,000 children, a history of chorea was obtained in eighty-five who had been operated on and in 162 who had not, which, reduced to percentage terms, means 0.4 per cent incidence in tonsillectomized and 0.5 per cent in nontonsillectomized children.

SCARLET FEVER

Scarlet fever is not infrequently followed by rheumatic symptoms or heart disease. It may well be considered as one of the infections leading to rheumatic heart disease. As the symptoms bear such a definite relation to the pharynx, the presence or absence of the tonsils must play some part in the incidence of scarlet fever. It was found that in 48,000 school children there were 6,099 who had had scarlet fever. There were 1,524 cases, or 7.6 per cent, among the 20,000 tonsillectomized children, and 4,575, or 16 per cent, in the 28,000 who had not been operated on. It was impossible to get the incidence of organic heart disease

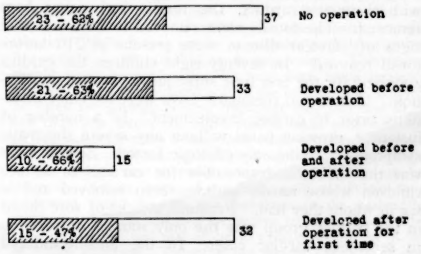

Chart 5.—Analysis of 102 cases of chorea with incidence of carditis.

in all the children with scarlet fever, for many of them had rheumatic infections later, so that the sequence of cardiac involvement could not be accurately determined. However, when cardiac disease followed scarlet fever without rheumatic fever, the incidence of carditis in the children whose tonsils had been removed was about half (48 per cent) as great as in the children in whom they had not. Sufficient evidence is at hand to warrant the opinion that the tonsils increase the hazard of a scarlet fever infection.

RHEUMATIC CARDITIS

The study of chronic valvular heart disease is based on the survey of 478 cases in which there had been an examination. The diagnosis of valvular disease is not always simple. It is quite possible that some of these patients had a functional murmur. All included in the study had an apical systolic murmur, and in many

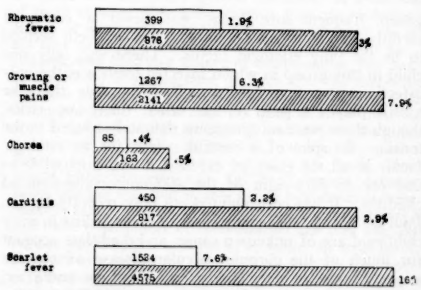

Chart 6.—Comparative incidence of rheumatic manifestations in tonsillectomized and nontonsillectomized children based on history only: white area, tonsillectomized children, 20,000; shaded area, nontonsillectomized children, 28,000.

instances a diastolic murmur. Those children in whom the murmurs were not present on repeated examinations were excluded as having rheumatic endocarditis. An effort was made to obtain from the parents a history of cardiac trouble, and it was thus found that known cardiac trouble was present in 440, or 2.2 per cent, of

the 20,000 tonsillectomized children, and in 812, or 2.9 per cent, of the nontonsillectomized group. It must be remembered that cardiac trouble may persist even after tonsil removal, so that the first group naturally would show a high percentage.

An analysis of the etiologic factors in the 478 patients examined gave some idea as to the part the tonsils play in the production of heart disease. In 190 children with rheumatic carditis, the tonsils had never been removed. The tonsils were removed in 288 cases, but signs of valvular disease were present in 210 before tonsil removal. In seventy-eight children the carditis appeared for the first time subsequent to tonsil enucleation. Chorea and rheumatic fever were the chief infections prior to cardiac involvement. In a number of instances, growing pains without any severe rheumatic symptoms were the only etiologic factors. Scarlet fever was the infection responsible for carditis in sixteen children whose tonsils had not been removed and in six in whom they had. Frequent attacks of sore throat in the former group was the only source of infection in seventeen cardiac cases. In the tonsillectomized group, frequent sore throat was never a cause of carditis. In thirty-two children, infected teeth seemed to be the only etiologic factor. There was only one child in this group in whom infected teeth was the only infection preceding carditis. It is possible that the tonsils played a part in the other thirty-one cases, though there were no symptoms definitely related to the tonsils. In spite of a careful search for an etiologic factor in all the cases of carditis, it was impossible to find one in fifty-eight of the 400 nontonsillectomized children. It has been pointed out only recently by Dr. Paul D. White [5] that many cases of endocarditis in early childhood are of unknown cause, and doubtless account for much of the chronic valvular disease of obscure etiology found in older children at school age and after, and in young adults. In the group in which operation had been performed, however, there were only six cases of endocarditis of unexplained origin, as compared to fifty-eight in the group in which there had been no operation. It is quite likely that some of these unexplained cases of endocarditis came from unrecognized rheumatic infections, often very mild and sometimes affecting the heart alone. It is suggestive that the tonsil, even in the absence of recognized rheumatic infections, may be a factor in the causation of carditis. An analysis of the 478 cases of rheumatic carditis in children showed that 400, or 83 per cent, developed with the tonsils in, while only seventy-eight, or 17 per cent, developed after tonsil removal over a period of not less than five years.

TABLE 2.—*Analysis of Four Hundred and Seventy-Eight Cases of Rheumatic Carditis in Children* *

Preceding Infections	Tonsils Not Removed		Developed Before Tonsillectomy		Developed After Tonsillectomy	
Chorea	8	23	4	20	7	15
Chorea and rheumatism	15		16		8	
Rheumatic fever	15	41	13	49	5	22
Rheumatic fever and chorea	26		36		17	
Joint pains	22	58	21	53	5	23
Joint pains and chorea	36		32		18	
Growing pains	6	17	10	17	3	5
Growing pains and chorea	11		7		2	
Scarlet fever	11		5		6	
Frequent sore throat	5		12		1	
Infected Teeth	16		15		1	
Unexplained	19		39		6	
Total	190		210		78	

* Four hundred, or 83 per cent, developed with tonsils in; seventy-eight, or 17 per cent, developed after tonsils were removed.

COMMENT

The removal of tonsils has been widely practiced in recent years. The reasons for their removal are numerous. Recent surveys have been made and reported to determine the effect of the operation on the general health of the child. When these end-results are compared with a control group of children, the benefits are not so striking. The marked decrease in the incidence of sore throat and its sequelae and the somewhat diminished incidence of upper respiratory infections has at least justified the procedure. The real value to the child, however, should come in reducing the risk of degenerative diseases that may come late in school or early adult life. If it can be demonstrated with adequate control studies that the tonsils are a focus of infection leading to organic heart disease, the converse must also be true that children without tonsils should have a better chance to escape the type of infections that predispose to valvular heart disease. If the tonsillectomized children as a group escape these infections, an effort should be made to define the earliest manifestations of rheumatic infection in order to select on that basis the children in whom tonsillectomy should be performed.

My studies aim to throw some light on that matter. The children who were operated on are living in the same environment and have the same exposures as those who were not. If one were to assume that chorea and rheumatic symptoms developed only from tonsillar infection, the results thus far would be disappointing. It is well known that there are foci such as sinuses, glands and teeth, and possibly others, which may give rise to the rheumatic manifestations even with the tonsils removed. One must admit that if there is, over a period of years, a distinct difference in the incidence of rheumatism and heart disease in tonsillectomized and nontonsillectomized children, the tonsils play an important part in the causation of this complaint. With the lessened incidence of rheumatic fever and allied rheumatic manifestations in the children whose tonsils have been removed, and the decided lessening of scarlet fever, it is to be expected that rheumatic carditis would occur less frequently in the tonsillectomized children, as it actually does.

CONCLUSIONS

1. A survey was made of 48,000 school children, in 20,000 of whom the tonsils had been removed, and 28,000 of whom they had not been removed.

2. The history pertaining to rheumatic fever, chorea, scarlet fever and heart disease has been obtained, and 1,200 showing signs of rheumatic fever, chorea or heart disease have been examined.

3. Most of the 20,000 children have had their tonsils removed for a period of five years or more.

4. Rheumatic fever, joint pains or growing pains occurred in both groups; 8 per cent of the tonsillectomized group and 10 per cent of the nontonsillectomized group had rheumatic manifestations. Many of the former had had rheumatic symptoms before tonsillectomy. The tonsillectomized child not yet infected has a decidedly better chance to escape rheumatic infec-

5. White, P. D.: The Incidence of Endocarditis in Earliest Childhood, Am. J. Dis. Child. 32: 536 (Oct.) 1926.

tion over the same period of time than the child whose tonsils have not been removed. Recurrent attacks of rheumatic fever were less common in the group in which operation had been performed.

5. Chorea occurred only slightly less often, 0.4 per cent as compared to 0.5 per cent, in the tonsillectomized group. The incidence of carditis following chorea was decidedly less in the tonsillectomized children.

6. Scarlet fever occurred in 7.6 per cent of the tonsillectomized children, and in 16 per cent of the non-tonsillectomized group. The children whose tonsils had been removed who developed scarlet fever developed considerably less valvular heart disease than those with scarlet fever in the control group.

7. Rheumatic heart disease was found in 450 of the 20,000 tonsillectomized children and in 817 of the 28,000 who were not operated on. Many of the children in the former group developed heart disease before tonsil enucleation. A careful analysis of 478 cases of carditis showed that in 83 per cent the condition developed before tonsil removal, and in 17 per cent following tonsillectomy.

8. Based on a control study of 20,000 tonsillectomized children, it must be concluded that the tonsil is a factor in the causation of rheumatism, scarlet fever and chronic heart disease. The tonsillectomized child is assured greater protection against these infections than his companion whose tonsils have not been removed.

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ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. ST. LAWRENCE AND KAISER

DR. HOMER F. SWIFT, New York: The necessity of both continued observation and unity of nomenclature is emphasized by these papers. Some of the statistics presented do not represent the true proportion of active rheumatic fever among hospital patients because of the lack of unanimity as to what should be called rheumatic fever and what should be considered as sequelae. Many physicians consider this disease as only polyarthritis rheumatica and its immediate accompanying complications. One often hears that a patient had acute rheumatism last month and is now suffering from endocarditis, as though the two conditions were separate diseases. One reason for this confusion is the division of observation of various stages among different specialists. The internist sees much polyarthritis, the pediatrician less and the cardiologist almost none; but if one group of physicians were studying all phases of the disease there would be more widespread appreciation of its protean manifestations. Recent pathologic studies have indicated how widespread are the lesions and yet how comparatively uniform are the tissue responses. The really important feature for the physician to determine in any case is whether or not the infection is active. The nomenclature recently suggested by the American Heart Association, when widely adopted, will do much to clear up the confused statistics. Under rheumatic fever all the recognized manifestations of the disease are to be classified and in each case it is to be stated whether or not the infection is active, so far as it can be determined. It has been shown that it is possible to help these patients if they are treated in a satisfactory institution, but, following institutional care, many of these children return to their own homes to the conditions which induced the original attack. Recently, we have observed several patients in whom a relapse or recurrence of rheumatic fever followed exposure of the patient to another member of the family who was suffering from an infection not recognized as rheumatic—a mother with tonsillitis, a sister with otitis media, or a brother with acute sinusitis. In the follow-up of patients, it is important to study the relation of these infections in the entire family to the incidence of rheumatic fever in the smaller groups.

DR. HUGH MCCULLOCH, St. Louis: During the last seven years that we have been observing a group of children, we have not seen any evidence of transmitted infection. I am, however, firmly convinced that rheumatic fever is frequently transmitted from one person to another. Under the conditions we find existing in our sanatorium, this infection apparently is not transmitted. I believe that the ordinary precautions taken in an institution are sufficient to prevent the spread. The contact must be intimate and prolonged for this transmission to take place. The factor we consider most important in the care of children in the country is heliotherapy. While it may not be as valuable as it is in rickets, it certainly is as valuable as in tuberculosis. This feature should never be neglected. We have been much impressed with the need for prolonged rest in the care of these children. So often the parents become impatient they feel that at the end of a few weeks the child should make progress. Our feeling is that it takes a long time even to institute recovery. We have seen children who showed no sign of progress even at the end of ten or twelve months. We must not lose patience. As an index of progress, gain of weight is an important sign. We do not feel because the patient has reached normal weight that he is free from rheumatic infection, but we do feel that if he is gaining weight he is free of active infection. Watching the weight curve is of great value because in numerous instances one can predict when the child is going to have a relapse. The weight chart will drop a week before the acute manifestations are apparent. If the weight chart is followed closely, some further injury to the heart may be spared. It is much better for these children to be cared for by the same person in the hospital, in the convalescent home, in the sanatorium, in the outpatient department, and after they have returned home. When there is close cooperation, the results are better. The necessary care can be given in the home. It is not necessary to have a child in an institution. If the same care and patience are shown in the home, I believe that the same results will be forthcoming.

DR. J. L. MORSE, Boston: I have never classified my rules of procedure as thoroughly as Dr. St. Lawrence has, but I think that I have followed the same rules. In the first place it has been my rule to keep every child with an acute inflammation of the heart in bed until the temperature was normal and I felt very sure that it was going to stay normal. I have considered a rectal temperature of 99.6 F. as normal. How flat the child shall be kept in bed must depend not only on the temperature but on the size of the heart, the rate of the pulse and the child's general condition. A great many of these children with acute carditis have no evidences of failure of compensation at any time. In such cases one does not have to think about compensation in getting them up. In children who have had failure of compensation, that has to be considered in getting them up, even after the temperature has gone to normal. There are then no symptoms of failure of compensation. It has been my habit to allow these children out of bed as soon as possible and to push them along on exercise as rapidly as possible, watching them all the time to be sure that they are not doing too much. Here I should rather disagree with Dr. St. Lawrence, because I doubt whether the child is able to tell how much exercise it ought to take. It seems to me that after the children are up, and there is no failure of compensation and they are taking regular exercise, the condition is no longer an acute carditis. They are over it, just the same as when they are over typhoid or pneumonia. They have a chronic valvular lesion, not chronic heart disease. It is not disease, it is a mechanical condition, a chronic valvular condition. Here we want to think about the mechanics of the heart and in these children, as in adults, it comes down simply to a question of how much exercise their hearts can stand without dilating or giving way. We must be guided with them, in the same way as we are in adults, not by the intensity of the murmur but by the size of the heart, the character of the first sound, the rate of the pulse and the character of the second pulmonic sound.

DR. HAROLD E. B. PARDEE, New York: I should like very much to go on where Dr. Morse left off in the discussion of

Dr. St. Lawrence's paper. I think that it is most important for us to decide when these children with cardiac disease can first be allowed to exercise, and I believe that can best be done along the lines which Dr. St. Lawrence has pointed out and which were endorsed by Dr. Morse. I think that when a cardiac lesion has healed, our decision can be guided by what the child himself feels when he exercises. If the child is allowed to exercise up to the point of producing symptoms, the child will recognize and admit that it has done too much. The child will have a memory of that sensation and it should be taught to use that memory as a guide to further physical activity. I do not believe that a child will ever overstrain its heart if it never does more than the amount of exercise necessary to produce that sensation. When children feel short of breath or feel palpitation, then they should stop, and they will never harm themselves. That is true of adults as well as of children. I do not believe that the physical signs of the heart are important guides to the amount of exercise. I believe that the patient's sensations are more important. It is important to bear in mind a statement which Dr. St. Lawrence made that children will exercise themselves to the maximum of their ability. There the proposition is very different from adults. Most adults rarely take a maximum amount of exercise. Children, then, cannot be told not to exercise because they will not know what this means. They must have the sensation which limits them pointed out to them and then they can use that sensation as their guide. I think that it is necessary to reemphasize the important effect of infection on the ability to exercise. This is a thing often overlooked in these children with cardiac lesions and one which should be kept more clearly in mind than it has been in the past.

DR. HOWARD B. SPRAGUE, Boston: I agree that the "rheumatic disease" as we see it at the Massachusetts General Hospital presents much the picture we have heard described. I should like to emphasize the fact that in our hospital for rheumatic children, which is the House of the Good Samaritan in Boston, we do not refer to the institution as a "convalescent home" because we consider that since this is the "rheumatic disease," these children are probably convalescent all the rest of their lives. It is essentially a hospital for the more acute cases. We are concerned there with the practical problem of determining how long these children should be kept quiet. They are referred to us from other hospitals, and we have more than fifty beds continuously filled with children with the rheumatic syndrome. I should like to make a plea to the members of this section who are seeing many healthy children to find out for us, and for the rest of the physicians treating this disease, just what normal temperature is. I think that there may be variations, climatic and seasonal, and possibly variations related to physical exertion and to mental or psychic stimulation. I am sure that so far normal temperature is largely a matter of opinion. We have taken a rectal temperature of 100 F. as the normal. Sufficient reasons have been given for tonsillectomy in these cases. Work done by Turner and White seems to indicate that those patients who had complete tonsillectomy and rheumatic carditis were less likely to develop subacute bacterial endocarditis. As that disease is practically 100 per cent fatal, anything that can be done to prevent its development is worth while. Tonsillectomy is a routine procedure at the Massachusetts Clinic and at the House of the Good Samaritan.

DR. FRANK C. NEFF, Kansas City, Mo.: It is remarkable how little is known about the incidence of rheumatic fever, chorea and heart disease in any country, and especially in the United States. I spent a part of the morning at the Surgeon-General's Library and also in the statistical department of the Public Health Service, and I find that they have no statistics on these diseases and their relation to diseased tonsils; their statistics deal only with mortality. Dr. Kempf and Mr. S. D. Collins of the Public Health Service have been interested in this subject, and they are now having published a paper that will give a review of the literature throughout the world. I think that we could well follow the example of the British Medical Association, which has had for some time a committee working on this subject. Dr. Reginald Miller is the chairman of that committee and its members have given much study to the etiology and also to the effect of the removal of tonsils in preventing primary infection as well as recurrences. There are figures from the U. S. Army that deal with adults. The incidence of tonsillectomies has increased among the men admitted to the army from 3 per cent in 1913 to 17 per cent, or more, in 1925, while the incidence of acute rheumatic fever has declined during that period from 6 per cent in 1913 to 1.1 per cent in 1925. In the report of the British Medical Research Council, it was stated that children who have heart disease and rheumatism are more apt to have diseased tonsils; in other words, the incidence of healthy throats in children with these diseases is very much smaller than in those who do not have these diseases. I think that Dr. Kaiser could take out of his classification the rather indefinite symptom of growing pains, although I recognize that it is a symptom of rheumatism, but it can be due to so many other causes, such as flat foot or bad posture, that it is not worth very much in the history as usually obtained from the parents. His observation on scarlet fever is interesting. Scarlet fever is apt to be mild in children who have had their tonsils removed and the heart is not so liable to be injured by inflammation or degenerative changes. Statistics on tonsil removal may not be very reliable as they do not tell whether the tonsils were successfully or completely removed, or whether any infected lymphoid tissues has been left in the pharynx. I believe that from a practical standpoint we can say that children of any age, after a year, or, in certain cases, less than a year, who have chronic diseased tonsils will stand a much better chance of escaping rheumatism and heart disease if the tonsils are taken out early.

DR. MYER SOLIS-COHEN, Philadelphia: I think that we all are disappointed in the results of tonsillectomies. Dr. Kaiser said that the children who had had their tonsils out had a better chance, but his statistics are not very convincing, because the group that did not develop pathologic conditions when the tonsils were out was only a little larger than the group whose tonsils had not been removed. The question arises, Why is this? We have a feeling that when we remove the tonsils we are removing the infection. I made a number of studies on organisms in the throat. I frequently found the same organisms in the rhinopharynx that were in the tonsils. Also, studies were made before and after tonsillectomy. The same organisms were present after as before tonsillectomy. Therefore, though we do remove tonsillar tissue, we do not remove from the throat the organism causing the infection. We cannot expect the infection to be cured by removal of the tonsil if we allow the organisms to remain. Unless the patient develops resistance against the organisms that remain, the disease condition will remain. Rest and fresh air, and all those factors that help in fighting tuberculosis, also help in fighting most other infections. But we can do something else; we can artificially raise the bactericidal power of the blood against the organisms in the throat by giving vaccine. We know that organisms are always present in the throat, and that we are all carriers. To make a vaccine from an organism of which one is merely a carrier will not do any good. But we can pick out from the organisms in the throat the one that is infecting the patient by growing in the patient's whole, coagulable blood all the organisms present in the patient's throat. The organisms that are killed by the whole blood of the patient may be regarded as being nonpathogenic for him, while the organisms that grow well in the whole blood may be regarded as being pathogenic for him and probably as infecting him. By injecting a vaccine containing chiefly the organisms thus shown to be pathogenic for the patient, one frequently will raise the patient's bactericidal power—his resistance—against the infecting organisms that remain in the throat. I have been disappointed when patients did not get better after tonsillectomy alone. I do not believe that we should necessarily regard tonsillectomy as a failure in those cases. But tonsillectomy does not go far enough. It does not remove the infection. Therefore, unless we get rid of the infecting organisms by raising the patient's bactericidal power against them, we cannot feel that we have done very much to remove the infection.

DR. FRANKLIN P. GENGENBACH, Denver: In view of the fact that there is less strain on the heart while the patient is in bed, I have found it helpful to start the exercises while the patient is in bed. All of us are familiar with the exercises one gets in the gymnasium while lying down on the mat. Before I ever think of allowing patients to get up or even before the bed is raised, I teach them to take exercises in bed. Usually their arms are being used anyway. The muscles most often neglected as long as they are lying flat in bed are the leg muscles, and the muscles of the abdomen. The simplest exercise for developing these abdominal muscles is to have the patient raise his head from the pillow. It brings into play the rectus muscles, throws a certain amount of strain on the heart, develops the muscles and improves the condition of the heart muscle. I also give foot exercises. Then I teach them what I call "walking on themselves," which develops the muscles one ordinarily would use in climbing stairs. That exercise brings into play all the big groups of muscles on the anterior and posterior surface of the leg. If exercises are started in this way there will be fewer relapses, and after these patients are up, they will stay up.

DR. GEORGE DOW SCOTT, New York: I should like to consider the subject of heart disease from a little different angle, the biochemical side. I believe that quite a lot of heart disease is hereditary. One organ in the body may be potentially weak—for example, the heart. There is also an acquired condition after birth which has its source in malnutrition. Then, again, we have the condition of acquired versus natural immunity to heart disease, the former being due to balanced metabolism. With the latter, we have to deal with the influence of the germ plasm on the soma or body cells; in short, we have to deal with the chromosomes. Biologists assert that the germ plasm exerts great influence on the body cells. Physiologists say that if the germ plasm has a strong influence on the body cells, then the body cells must possess a similarly influence over the germ plasm. This is the attitude I take in spite of the mendelian theory. When one talks of heart disease, one has to consider the biologic cell and its nutrition, which necessitates a study of its physiologic and biologic chemical reactions.

DR. A. D. KAISER, Rochester, N. Y.: The study of children in whom tonsillectomy has been performed has been somewhat disappointing as far as the incidence of rheumatic manifestations is concerned. There is evidence at hand, however, that tonsillectomy does insure from 20 to 30 per cent prevention of rheumatic infection. Throughout this country and England, efforts are being made to reduce the incidence of rheumatic heart disease. While there is no certainty as to the etiologic factors in rheumatic manifestations, it seems desirable to search for the early manifestations of this disease in order to remove the tonsils before great harm has been done. The greatest benefit from tonsillectomy comes to those children in whom the early symptoms have been recognized. The appearance of the tonsils should not be the determining factor, but the history of the child's infections must determine when tonsils should be removed. It was found in this large series that many children with rheumatic fever were passed up year after year, even with these rheumatic symptoms, because their tonsils looked harmless. A history of growing pains or joint pains following frequent sore throats, regardless of the appearance of the tonsils, indicates tonsillectomy. The early recognition of these symptoms will safeguard more children against severe rheumatic disease.

Functions of Junior High School.—The functions of the junior high school include reorganization of the curriculum, consideration of individual differences, meeting the problem of elimination, and adapting organization and teaching methods to the period of adolescence. To satisfy individual needs, flexibility is one of the first considerations. The central problem of mental hygiene herein involved is adjustment of the pupil to the daily work. In a high school where both the curriculum and the instruction are fitted to the pupil's needs and desires, one cause of mental conflict is minimized.—Bird, Grace E.: *Mental Hygiene* **11**:253 (April) 1927.

DIAPHRAGMATIC HERNIA*

JOHN HOMER WOOLSEY, M.D.
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Diaphragmatic hernia is not a rare lesion as is generally supposed, but it was a rare clinical observation until the advent of the roentgen ray. The symptomatology is now so sufficiently well established and the knowledge of its occurrence such an evident fact that consideration of it must be given in any infant demonstrating certain characteristic signs, as respiratory difficulty, dextrocardia, or recurrent gastro-intestinal obstruction symptoms, or in any traumatism in which there has been a direct blow to the abdomen or chest or because of which fractured ribs or increased abdominal strain have resulted. The lesion is "amenable to surgical treatment" as a result of the advance in operative technic and our increased knowledge of thoracic behavior. However, as Richards[1] states, "confusion and uncertainty underlying this surgical enthusiasm exists and indicates not only uncertain but inaccurate knowledge of the fundamental principles of diaphragmatic hernia."

DEFINITION

A diaphragmatic hernia is a protrusion of the abdominal viscera through the diaphragm into the thoracic cavity. The opposite condition could likewise be so defined but does not occur, owing to the relatively greater fixation of the thoracic viscera. Diaphragmatic hernias are classified best as:

1. Congenital (present at birth).
(*a*) False.
(*b*) True.
2. Acquired (employed in the same sense as acquired inguinal):
(*a*) False.
(*b*) True.
3. Traumatic.

Bevan[2] would replace the latter by classifying them as traumatisms of the diaphragm since a large proportion are primarily injuries of the diaphragm with the hernia as a secondary occurrence.

Congenital hernias of the diaphragm are those present at birth. They occur in various points of the diaphragm, through the normal openings, through the weak spots in development and through areas of failure of fusion. The cause is not known, but various reasons are advanced for the last type.

The acquired diaphragmatic hernia is similar to the acquired inguinal. Sir Astley Cooper says that "if the esophageal opening existed at the lower end of the abdomen, protrusions would almost constantly occur, which is also confirmed by its being a more frequent occurrence in quadrupeds than in man." Bevan believes that they always occur at the esophageal opening. A review of the literature substantiates this, and in practically every instance a peritoneal sac has been present. An esophageal opening larger than necessary occurs

* From the Department of Surgery, University of California Medical School.
* Read before the Section on Surgery, General and Abdominal, at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 19, 1927.
* Because of lack of space, this article is abbreviated in THE JOURNAL. The complete article appears in the Transactions of the Section and in the author's reprints. A copy of the latter will be sent by the author on receipt of a stamped addressed envelop.
1. Richards, L. G.: Nontraumatic Hernia of the Diaphragm: An Embryologic Viewpoint, Ann. Otol. Rhin. & Laryng. **32**: 1145-1196 (Dec.) 1923.
2. Bevan, A. D.: Diaphragmatic Hernia, Arch. Surg. **1**: 23-38 (July) 1920.

often, because of the development of the stomach at this point and later a further descent of this organ, thereby leaving a space between the esophagus and the diaphragmatic edge. The formation of the esophageal opening by the crura, muscular bands, also favors a possible herniation. Increased intra-abdominal pressure and the vacuum power on the thoracic side are possibly important factors.

The traumatic diaphragmatic hernias are those resulting from such injuries as the following, and are always associated with a tear of the diaphragm:

1. Severe blow in the upper abdomen or lower thorax, as from a bottle, from a swinging plank or from a passing vehicle.
2. A compressing injury of the lower chest or abdomen, as when one is caught between two objects, or run over by an automobile.
3. A sudden doubling of the body so as to force the head between the knees.
4. A sudden twisting, with strain, at the costo-abdominal junction.
5. A fall, regardless of how the person alights, as in a mine shaft or from a second story of a building.
6. Stab or gunshot wounds.
7. Heavy lifting.
8. Intra-abdominal strain, as in childbirth.
9. Subphrenic abscess with rupture of the diaphragm.
10. Empyema thoracosis with rupture of the diaphragm.

A review of the literature and of the case reports since 1900 dealing with the types of diaphragmatic hernia that occur in civil life and holding sufficient data reveals facts of practical value. Twenty-eight traumatic, twenty-eight acquired, and fifty congenital cases comprise this study.

TRAUMATIC DIAPHRAGMATIC HERNIA

The traumatic type of hernia occurs, as expected, most often in males and in adult age, in accordance with the previously mentioned causes. The left side

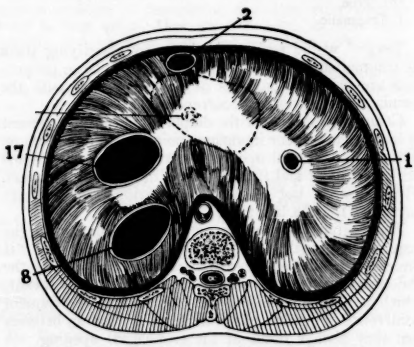


Fig. 2.—Location of traumatic diaphragmatic hernias.

was involved in twenty-seven instances and the right in one, although it is a question whether the latter (case 11) was not an acquired hernia. The hernial orifice was located in seventeen instances in the left central region; in eight in the left posterior; in two in the left anterior, and in one in the right center. The size of the hernial orifice was as a rule comparatively large, approximately 8 cm. being the average. Twenty-seven were of the false and one of the true type. Nineteen patients were operated on successfully and the other nine came to autopsy without having been treated. Transabdominal approach was employed in nine instances; transthoracic in eight instances, and in one instance a combined approach was used. Of the nine cases that came to autopsy, all were undiagnosed save one, and in seven instances sufficient time had elapsed between the time of injury and death for a thorough study and operation, which, had it been done, might possibly have averted death.

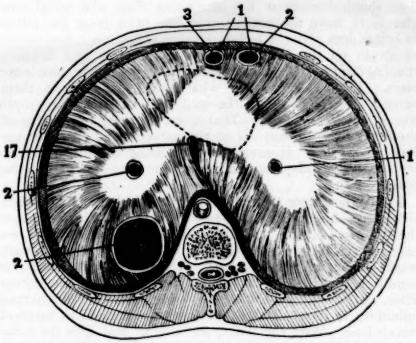


Fig. 3.—Location of acquired diaphragmatic hernias.

The acquired type of hernia occurs chiefly in adult life, affects the two sexes equally, and has a history of years' duration with gradual increase in the degree of symptoms. In nineteen cases operation was successful, and nine cases came to autopsy either before or after operation. The hernia occurred through the esophageal orifice in seventeen instances; in the left posterior region in two; in the left anterior region in three; in the right anterior region in two; in both anterior regions in one; in the left central region in two, and in the right central region in one. A definite hernial sac or a true hernia was found in twenty instances; no sac or a false hernia in three instances, and in five instances no statement was made as to the condition present. In the three instances of the false type (cases 19, 22 and 26), they should be classified as traumatic, for the hernias apparently developed coincidentally with whooping cough, subsequent to an empyema and coincidentally with an ulceration of the esophagus, respectively, and they were all acute in onset, although not necessarily incapacitating until late. The hernial orifice was as a rule approximately 4 cm. in diameter. The diagnosis, always by means of the roentgen ray, was established in thirteen instances, and in each instance an operation followed. The diagnosis was not established in thirteen cases. Of the nine patients who came to autopsy, six had not had any diagnosis or surgical investigation; death was from intestinal obstruction in every instance, with the final illness extending over a period of days.

The congenital diaphragmatic hernias occurred in infants (from 0 to 2 years) twenty-nine times; in children (from 3 to 16 years) three times, and in adults (16 plus) twenty-three times. It affected the sexes equally, and was characterized in adults by a long history of recurrent attacks; in children by maldevelopment and recurrent to continuous symptoms of gastro-intestinal obstruction, and in new-born infants by respiratory difficulty, or continuous severe respiratory embarrassment and recurrent gastro-intestinal obstruc-

tion. In twenty-eight instances the hernias were on the left side—in twenty-four by the posterior pleuroperitoneal passage; in one by the left foramina Morgagni; in two in the left central dome, and in one into the pericardial sac. In ten instances the hernias were on the right side, and of these eight were by the posterior pleuroperitoneal passage, one in the right foramina of Morgagni and one in the right central dome. Five hernias occurred through the esophageal orifice and one by way of the vena cava passage. Thirty-two of these congenital diaphragmatic hernias were false in type and twelve true; in six instances the type was not definitely stated. The average size of the hernial orifice was 5 cm. Of the twenty-four infants, two were operated on successfully at 31 months and 35 days, respectively, and twenty-two came to autopsy. Of these twenty-two, at least seven, in none of whom a diagnosis had been made, could have been operated on and possibly their lives might have been saved, and seven others of the twenty-two, also without a diagnosis, and therefore proper treatment, might have had their lives prolonged and the operation performed later.

To recapitulate, the traumatic diaphragmatic hernias are acute in nature, although patients live in many instances for a period of years; they are undoubtedly always of the false type; are usually on the left side, and demand prompt surgical repair. In seven, or 77 per cent, of the eventually fatal cases, had the diagnosis been made, operation could have been performed, and death possibly averted. The acquired diaphragmatic hernias occur for the most part by way of the esophageal orifice; are gradual in onset; are as a rule true hernias, and are amenable to treatment. In six out of the nine patients who came to autopsy, surgery should have been employed if only as an exploratory operation and thereby 66⅔ per cent of the nine lives might have been saved. The congenital diaphragmatic hernias occur chiefly by the posterior pleuroperitoneal passages, in the left side three times as often as in the right, and are usually false hernias. In the infants, 31 per cent of those who eventually died should have been operated on and possibly saved, and another 31 per cent with diagnosis and proper treatment might have had their lives prolonged with surgery later. It is therefore possible that in twenty out of the forty fatal cases of diaphragmatic hernia mentioned, lives could have been saved by keener diagnosis and by giving surgery an opportunity.

TREATMENT

If there is danger of encarceration of abdominal viscera in any abdominal parietal hernia, it is doubly possible in the hernia under discussion. Unless it is definitely known that there is a large opening, a shallow hernial depth and a definite sac as is found so frequently with the acquired diaphragmatic hernias, only one safe type of advice can be given. This advice is early surgical repair. In the traumatic cases, if the existence of a diaphragmatic hernia is demonstrated, immediate surgery should be the rule.

The type of anesthesia employed is of minor importance. Nitrous oxide and oxygen or ethylene alone or with ether is, however, recommended, for then the lung of the injured side can be distended to fill the chest cavity at the close of the operation.

The choice of route to reach the hernia is dependent on the location and type of the hernia. The transthoracic approach is excellent for a true hernia of the left diaphragmatic leaflet or for a long standing traumatic hernia with probable intrapleural adhesions, and is the method of choice for a posterior hernia of the right diaphragm and a hernia of the esophageal opening that passes well up to the right side. One does not need to fear the loss of intrathoracic negative pressure if the mediastinum is held rigidly or the lung of the injured side is held to the chest wall. By this route, many operators claim an excellent view of the hernia, ease of reduction of herniated organs, and an increased advantage in the hernial repair.

The abdominal route has likewise proved successful in an equal number of instances. By this route, the majority of the hernias of the esophageal opening, all the hernias of the anterior portions of the diaphragm, the fresh traumatic hernias and all the early congenital cases can be well handled. A Bevan incision, a reverse Trendelenburg position for the patient and cotton gloves to hold the reduced viscera from returning into the hernial area, as a result of the considerably negative pressure with each inspiration, aid tremendously in the exposure and the ease of returning the herniated intestine to the abdominal cavity.

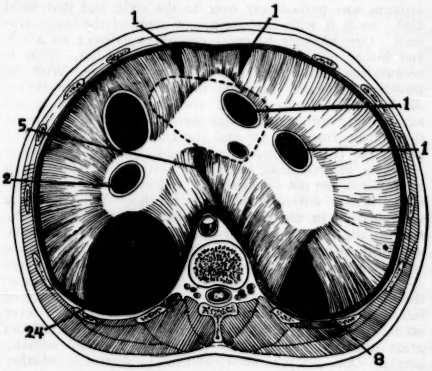


Fig. 4.—Location of congenital diaphragmatic hernias.

The closure of the hernial orifice should follow the general principle of all hernial repairs—fibrous tissue to fibrous tissue—with overlapping if possible. Since each side of the diaphragm is covered by an endothelial coat, peritoneum and pleura, it is important to have this tissue somewhat roughened to secure the strongest tissue union. Absorbable suture should be reinforced by nonabsorbable suture. Protection to the line of closure by some contiguous tissue, as omentum, chest wall or stomach, may be of value. If necessary, a piece of fascia lata can be transplanted to fill the defect.

PROGNOSIS

Early surgical treatment chosen as previously outlined gives an excellent prognosis both immediately and for the future. The high mortality so frequently quoted is due to the advance occurrence of strangulated bowel and the employment of operative treatment as a last resort.

CONCLUSIONS

1. Diaphragmatic hernia is not uncommon and should be held constantly in mind.

2. Failure in diagnosis is the cause for the lack of proper treatment in the past.

3. The congenital type is usually false; the acquired, true, and the traumatic, false.

4. Diaphragmatic hernias occur in certain known areas, and the congenital and acquired types are definitely related to embryologic development.

5. Diaphragmatic hernia is "amenable to treatment."

490 Post Street.

ABSTRACT OF DISCUSSION

DR. PHILEMON E. TRUESDALE, Fall River, Mass.: Diaphragmatic hernia is one of the concealed deformities, exceedingly difficult to diagnose, unless the examiner has it in mind. The problems associated with diaphragmatic hernia present a fascinating study. The condition produces an altered function of the heart and lungs. It affects the stomach, liver, intestines, kidneys and pancreas, because at one time or another all these structures have been observed above the diaphragm. Why doesn't the patient die who has a diaphragmatic hernia from external violence? There is always pressure of considerable degree against the mediastinum. It is because in man the mediastinum is not a swinging structure. It moves within a narrow range. On the other hand, in the infant, as was shown in one of those plates, the mediastinum was pushed way over to the right and that child died. So it is with experiments on some of the lower animals. One attempts to carry out an experiment on a cat, and before one has proceeded far the cat dies. That is because the mediastinum is a swinging structure. With the inrush of air and intestines through the aperture in the diaphragm, the lung doesn't always collapse, but it can expand only within that range permitted by the pressure on the outside from the air and the transposed viscera. The air in the hollow viscera first produces stasis, then, as it increases, incarceration, and finally obstruction. Obstruction is produced, but not strangulation, and in that way diaphragmatic hernia differs from other hernias. Why does not strangulation in diaphragmatic hernia occur? Because the ring in the diaphragm is not dense and fibrous as is the umbilical ring or the inguinal ring. In the diaphragm there is enough elasticity to the margin of the ring to permit the circulation to continue in spite of the fact that the lumen of the intestine is constricted so as not to permit the passage of intestinal contents. Therefore strangulation almost never occurs in diaphragmatic hernia; consequently there is seldom great emergency even about obstruction in diaphragmatic hernia. One can take sufficient time to determine whether or not the large intestine is involved in the hernia. If the colon is involved in the hernia, a laparotomy should not be done to cure the hernia. The first step to be taken is an appendicostomy or a cecostomy. That will relieve the obstruction, provide a safety valve and thus lower the mortality from more than 50 per cent to 5 per cent. This is brought about by doing the operation at a later period, when the patient is in a satisfactory condition.

DR. J. EARL ELSE, Portland, Ore.: Dr. Woolsey has done a real service in calling attention to a lesion which, while not common, does occur and is overlooked, often resulting in death because of the fact that it is overlooked. My own interest in diaphragmatic hernia came through experimental work in the reconstruction of the lower end of the esophagus. The approach was made from above, and it is surprising what a large opening can be made through the diaphragm without tearing any fibers at all, merely stretching the esophageal opening. Another surprising feature is the way in which the organs can creep up into the chest. In cases of obstruction there is an immediate termination. In one of our dogs, sudden death occurred through the intestine's becoming obstructed; but in some others we found that the organs gradually crawled up without becoming obstructed. We also discovered that when we used interrupted sutures of nonabsorbable material and made them close together, we had no further trouble. While we did not get anywhere with our work on the reconstruction of the esophagus, I think we did learn a little about diaphragmatic hernias. The one point I want to make is the importance of using nonabsorbable material and putting the stitches close together so that, if one or more cut out, it still will not leave an opening that permits a hernia to occur.

DR. CARL A. HEDBLOM, Chicago: I cannot quite agree with Dr. Woolsey's statement that the diagnosis can be made by the roentgen ray in 100 per cent of the cases. Spontaneous reduction of herniated bowel may occur from time to time, and if the roentgenogram is made during such a period the hernia is not demonstrated. A herniated loop of bowel may fail to fill with the contrast mediums or it may be so small as to be overlooked. Herniated omentum and spleen are not demonstrable roentgenographically. Negative observations, here as elsewhere, are of uncertain significance. If the abdominal route is used, a costal margin incision, in my opinion, is much superior to a longitudinal one for approach to the hernia opening, particularly if it is located laterally. It is important to bear in mind that serious disturbance of intrathoracic pressure relationships may occur following operation. Pneumothorax results from opening into the pleural cavity, and the respiratory capacity of the other lung is interfered with in proportion to the reduction of the negative intrapleural tension by shift of the mediastinum. The intra-abdominal tension is increased following reduction, especially of a large hernia that has "lost its right of tenure" in the abdominal cavity. Postoperative distention may increase it further. The combination of these conditions may lower the respiratory capacity beyond the limit of compensation. To counteract this condition the lung should be inflated before closure or the air should be aspirated after the closure, and every effort made to combat intra-abdominal pressure. In some cases it may be advisable to leave the fascia unsutured, closing the skin only. The resulting hernia can be repaired later. In the review of the literature which I reported two years ago, I found very few instances occurring in babies in which favorable results had been achieved following operation.

DR. JOHN HOMER WOOLSEY, San Francisco: Postoperative drainage of the pleural cavity with extraction of the air is a wise procedure. It is not wise, however, to have the anesthetist distend the former compressed lung, for this may stimulate some physiologic change, with a resulting hemorrhage or a possible pneumonia. It is better to expand the lung gradually by having the patient institute a positive pressure for a few days after the operation. In the abdominal approach one should enlarge the hernial orifice of the diaphragm and explore for the presence of adhesions that might interfere with reduction of the herniated organs. Coincidentally, this overcomes the troublesome negative intrapleural pressure. Dr. Truesdale has emphasized a point of importance in all chest surgery—the holding of the mediastinum, especially in babies, rigidly when the chest is so widely opened. Chutro of Buenos Aires first called my attention to the collapse of the mediastinal tissues with the resultant interference with respiration and circulation, when the chest cavity is opened in a young person or in a noninflammatory condition. Following his suggestion, in such instances the collapsed lung on the operated side is held firmly away, giving universally immediate improvement in the state of the patient.

Diathesis.—As evolution proceeds, from the single cell to the nations of such units which constitute higher animals and plants, the somatic cells of which the various tissues are built up become specialized for the several purposes which they have to serve, the renal cells for their work and the hepatic for theirs, and in so doing lose at first part, and later almost the whole, of the power which the primary cells possessed of reconstruction and repair of tissues; such repairs as are possible are carried out by the wandering cells of the mesenchyme. Only the germinal cells retain the power of reproducing all the tissues and structures of the body, which renders possible the propagation of the species. Whatever may happen to the somatic cells affects the individual, but not the future of the race—just as in a hive the worker bees are specialized for the carrying out of the appointed tasks, but have no share in the continuation of the race, save in so far as they care for the fertilized queen; so may we think of the somatic cells as waiting upon the need of the germ plasm.—Garrod, Archibald: Diathesis, *Brit. M. J.*, Nov. 26, 1927.

CONGENITAL CATARACT

A PLEA FOR VARIETY IN ITS SURGICAL TREATMENT *

L. WEBSTER FOX, M.D.
PHILADELPHIA

A mere statement of the condition known as congenital cataract brings to mind the picture of a young child, the subject of a succession of needling operations, followed by a corresponding series of inflammatory reactions of varying grades, terminating in indifferent results as to the ultimate vision obtained, and a lifetime of abject slavery to heavy lenses that are always out of adjustment. In view of the more recent knowledge of the crystalline lens obtained by means of the slit lamp, the procedure in the surgical treatment of congenital cataract may be modified very materially, and thus the period of invalidism to the patient greatly reduced.

Ophthalmologists often fail to appreciate that congenital cataracts are developmental defects. They are often regarded merely as opaque lenses that have existed since birth. A cataract is much more than that. It is a part of a whole cycle of events. That it is due to some malformation or distortion of the embryonal cells may be gathered from a reference to the series of cases mentioned by A. L. Brown,[1] in which the cataract occurred in three generations of one family and in which transmission was always from the mother, but affected sons and daughters alike. This type is called hereditary cataract, and in such cases a transmitted low mentality is often observed. It has frequently been my experience in such families that mentally defective children alternate with children having congenital cataracts. Obviously, such a group of cases calls for individual consideration in the matter of the surgical treatment.

There are also cases of hereditary cataract that call for no treatment. J. Gonzalez,[2] a Mexican ophthalmologist of prominence, who has carefully studied the subject of congenital cataract among the Mexican people, observed a family in which the grandmother, one son and five grandchildren presented punctiform cataracts. In each case the whole lens subsequently became opaque during the youth of the patients. Most cases of this character observed in the United States remain stationary, and vision is improved with glasses. Frequently, no operation is required, although normal vision is by no means obtained.

By way of contrast, however, may be mentioned the series of cases of familial cataract which embraced five generations, recorded by Frank N. Knapp [3] of Duluth, Minn. His immediate experience was confined to the observation of the perinuclear or lamellar type in six members of the same family; namely, the father, a daughter and two of her children, and a son and his daughter. All the cases presented identical ophthalmologic pictures; namely, the center of the lens was filled with black radiating streaks intermingled with fine black spots, between which the red reflex of the fundus could be obtained. There was a marginal area of clear lens substance. One patient was able to continue his work and education without operation, although his vision was not very great. Two had simple needling operations; one patient had vision of 20/65 with glasses; the other one was not noted. One had several needling operations followed by corneal incision and expression; here the vision was brought by glasses to 20/40. Another had a discission, and a button-hole iridectomy with expression of the lens débris. This patient finally obtained a vision of 20/40 with correcting lenses. This emphasizes the value of not confining one's surgical talent to any conventional precedure

The family history of this group is especially interesting. The record showed that double cataract extended through five generations of the family. Three of the four members of the third generation suffered with partial cataracts. Six of the seven members of the fourth generation were born with partial cataracts, while in the fifth generation only eight had cataracts from a total of twenty-five. These patients were of normal mentality with no history of consanguinity. The adult growth of the lens was manifested by the increased area of clear cortical substances observed in the older patients. The density of the opacities did not increase with age. Removal of the lens increased the vision in all cases. There was only one instance of nystagmus noted in the six cases observed by Knapp. Furthermore, he states that optical iridectomy was not warranted as vision was not improved by dilation of the pupil. This point will be discussed again farther on in this article.

THE NEEDLING OPERATION

It is not the purpose of this paper to belittle the operation of discission, but rather to restrict its application to those cases that admit of no alternative. The needling operation has had a long and honored history dating back as far as 1711, when Maitre-Jan made the observation that a disintegrated lens would be absorbed as well in the anterior chamber as in the vitreous. However, E. E. Blaauw [4] of Buffalo calls attention to the fact (quoted from Hirschberg, the historian of ophthalmology) that Bannister in 1622 made a similar statement regarding the absorption of the lens in the anterior chamber, but in so doing he was only copying the observation recorded by Jacques Guillemeau in his book published in Paris in 1585.

However, it must have received very desultory attention for it did not arouse particular enthusiasm until Pott, in 1775, published a separate article on cataract in his surgical works, and coined the term "dissolution" for this operation. He adopted laceration as a separate method of treatment. Distinguished surgeons like Ware and Warner performed a similar operation reducing the lens to fragments and awaiting its absorption. Dr. J. C. Saunders (1804), the founder of Moorfield's Eye Hospital (the Royal London Ophthalmic Hospital), is generally accredited, especially by English speaking ophthalmologists, with having introduced the operation as it is now performed and with having devised the needle usually employed. The shoulder safeguard, however, is the suggestion of Sir William Bowman. Perusal of Saunders' posthumous work, edited by his friend J. R. Farre, in 1811, will convince the skeptic that the operation as performed previous to this period left much to be desired, and that his method was a great advance, if not altogether original in the fundamentals involved. Abernethy, Hey, Cappuri, Adams and Parmi, among others, discussed the operation and its possibilities, as well as frequently performing it. This historical review is made only to justify the status this

* Read before the Stction on Ophthalmology at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 20, 1927.

1. Brown, A. L.: Am. J. Ophth. **7**: 539 (Jan.) 1924.
2. Gonzalez, J.: Ann. Soc. Mex. de Oft. y Oto-Rino-Laryng., September, 1923, pp. 83-85.
3. Knapp, F. N.: Am. J. Ophth., September, 1926, p. 682.
4. Blaauw, E. E.: Am. J. Ophth., August, 1926.

operation enjoys, although my purpose is to urge a restriction in the frequency of its employment.

It is usually employed in the child, aged 2 or 3 years, who is unable to see because of opacities in the crystalline lens. Detailed examination of the lenses is often difficult or impossible by reason of the age of the patient, and we know only that the pupils react to light and that the lenses are opaque. Nystagmus frequently is present. Needling is suggested, and the hopeless condition of the child leads the parents to consent to the performance of the operation. The child is prepared for general anesthesia, the pupils are dilated with atropine, and the needle is passed into the lens substance in accordance with the accepted technic, thus allowing some of the soft lens substance to ooze into the anterior chamber, and the aqueous to have access to the lens within the capsule.

The resulting swelling of the lens in its capsule, and its pouring out into the anterior chamber, accompanied by inflammatory reaction, is a familiar picture and is usually regarded as of no serious significance, since it will occur with each successive needling, and several are usually necessary. The invasion of the general pathologist into the domain of ophthalmology has brought us rumors of allergic reactions when the lens matter is being absorbed in the anterior chamber, and an added dignity to what we have been inclined to regard as commonplace. Each reaction must involve important structures of the eye and leave permanent harm behind. This must contribute to the poor results that often follow in these cases, to which we are so likely to attribute other concomitant congenital defects of the eye of which we had no previous knowledge but which we are prone to create for the purpose of an alibi.

In the slit lamp observations of M. H. Cottle,[5] four cases of adhesions of the vitreous to the cornea were noted following the needling operation for secondary cataract. This opens for speculation the question whether this does not occur more frequently than we have previously supposed. If it does, it must influence our results in the discission operation for congenital cataract likewise. The slit lamp has brought to attention many cases of lenticular opacities of an unusual type that by the gross examination previously in vogue would not be classified as cataract but must now be so considered.

Even in a good case we can only offer the patient the prospect of several needlings, with their attendant reactions, and the wearing of high convex lenses. These he will wear reluctantly, if at all, and such educational advantages as he might have obtained by the early performance of the operation are materially minimized by the discarding of heavy and thick correcting lenses. Vision is difficult enough to develop, but in the absence of the crystalline lens the vision that develops lacks depth in the images, and stereoscopic vision is questionable in these youngsters. Therefore, such vision as may be obtained with the lens in situ is likely to be more comfortable than that of the aphacic individual. The person who has been able to see and then loses the crystalline lens has a hard enough time of it, as is well known, but his visual memory comes to his assistance. Let us consider the difficulties under which the subject of congenital cataract labors. We have observed that in those young adults in whom quite pronounced lenticular opacities of a congenital character have persisted unaffected by surgical intervention, vision of an acute character is present up to a certain point. This shows the need of the lens to develop perspective. The visual fraction may be low but the sight present is valuable to the discharge of the vocation the patient has elected. This is mentioned to impress the importance of maintaining the lens in situ, if at all possible.

The approach to the subject which I recommend has been appreciated by other ophthalmic surgeons. Thus, W. de Hallet [6] advises the performance of either optical iridectomy or complete removal of the lens in zonular cataract, giving preference to the former, especially if improvement in vision is possible by dilation of the pupil with a mydriatic. Rowan [7] recommends iridectomy down and in, if dilation of the pupil gives good vision.

OTHER METHODS

Ophthalmic literature in the last few years contains many references to results obtained in congenital cataract by resorting to other than the conventional needling operation, showing that the subject is receiving intensive consideration from every source. A few of these may be mentioned, although in no particular order, since the observations around which the papers have been written have taken place about the same time. McCluney Radcliffe,[8] for instance, utilized the V-shaped incision method of Ziegler in ten cases with success, as did Burton Chance [9] in two cases. Dean [10] did the needling operation and then extracted the disintegrated lens by the suction method within three or four days after the operation with a good result.

I may also with propriety refer to C. Behr,[11] who in cases of partial congenital cataract makes a wide corneal incision after which he cuts the lens capsule and cortex in a circular manner, paralleling the opacity with a large cystotome, and then expresses the lens. Mydriasis is continued for two weeks, by the end of which time the cortex and débris are absorbed. He regards discission as unsatisfactory for these partial cases.

Other foreign observers have also criticized the operation. G. Horay,[12] after an experience with 151 children with congenital cataract, comes to the conclusion that the best results follow the combined linear extraction, and that even in the first few years of life the results were equal to those which are obtained in older patients.

George Huston Bell [13] of New York has recorded the very elaborate technic of the operation that he utilizes in congenital cataract, which is essentially a two-stage operation. The first stage consists of an iridectomy. Four weeks later, he employs the Ziegler discission technic with the exception of entering through the cornea. He introduces a Ziegler knife about 5 mm. beyond the limbus, going through the conjunctiva and entering the anterior chamber through the sclera just back of the limbus. The discission is performed within the coloboma previously produced by the preliminary iridectomy. In a way this approaches more nearly my own conception of the proper management, although I find fewer indications for consideration of a second stage.

5. Cottle, M. H.: Am. J. Ophth. **7**: 227, 263-267 (April) 1924.

6. De Hallet, W.: J. Ophth. Otol. & Laryngol. **28**: 235-241, 1924.
7. Rowan, J.: Tr. Ophth. Congress, Glasgow, May, 1924; Am. J. Ophth. **7**: 640, 1924.
8. Radcliffe, McCluney: Am. J. Ophth. **7**: 766-769 (Oct.) 1924.
9. Chance, Burton: Am. J. Ophth. **7**: 309 (May) 1924.
10. Dean: Am. J. Ophth. **7**: 394, 1924.
11. Behr, C.: Ztschr. f. Augenh. **54**: 347-353, 1925.
12. Horay, G.: Klin. Monatsbl. f. Augenh. **94**: 178-184, 1925.
13. Bell, G. H.: Am. J. Ophth. **9**: 433 (June) 1926.

E. K. Findlay[14] removed a membranous cataract through a keratome incision with a hook. This proved microscopically to be made up of two lens capsules (anterior and posterior) with a thin layer of lens fibers between. In a recent case of my own, after dilation of the pupils incidental to operation, the appearance of the lens seemed to justify a similar procedure, and it was possible to remove complete, by means of a hook-end forceps, the entire cataract. It required considerable gentleness and dexterity to accomplish this, and a most gratifying result without any reaction was obtained.

AUTHOR'S PROCEDURE

With these objections to the treatment of juvenile cataract prominently before me, I have given considerable time and thought to providing my little patients with better surgical treatment. In the main this depends on whether or not a clear cortical area exists in the lens, but another important consideration is the avoidance of the reaction changes that must follow the emptying of the lens matter into the anterior chamber. Its importance in senile cataract is appreciated, and an effort is made to leave the pupil as clear as possible. This is indicated by empiricism, but modern conceptions of pathology add a note of confirmation that cannot be ignored.

There are many forms of congenital lenticular opacity that do not involve the entire lens but which materially affect vision by obscuring the pupillary center. Examination with the slit lamp, as I have previously remarked, shows a great many more of these cases than is usually supposed, and while I am not always able to apply this type of examination to those of tender years, I can obtain a great deal of information from my older patients, which will provide certain gross clinical symptoms for guidance in the very young patients. Therefore, I urge a most careful examination of the eyes in all lenticular cases, with the pupil widely dilated, utilizing all the resources at our command to obtain the information so essential to the success of the undertaking.

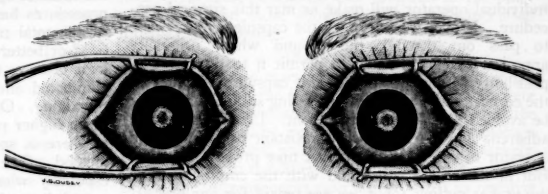
If examination shows that the periphery of the lens in both eyes is clear (usually these cases are bilateral), then the operation of choice is a small optical iridectomy at the nasal side in each eye, performed at the same sitting, so placed as to permit perfect binocular fixation, especially at close range. There is nothing unusual or original about an optical iridectomy, but a demand is placed on the surgeon's skill and dexterity to place it in the right situation in these cases. This is by no means easy even to the surgeon of experience.

Great care must be taken in the preparation of these cases, and the emphasis laid on this by Bell[13] is by no means overdrawn. The presence of any catarrhal condition of the upper air passages is likely to have a disastrous effect on the operation. These patients are especially prone to chronic rhinitis. Some experimenters have found rachitis to be a factor in the production of lenticular opacities while others have not, but a rachitic patient should receive attention along these lines despite the disagreement of the laboratory workers.

These are all cases for general anesthesia, and additional difficulties present themselves in precision work about the eyes when the patient is not conscious. However, the nystagmus ceases, which is a compensation. Still, it should be borne in mind as a matter of technic that once the eye has been grasped by the fixation forceps, it is best not to release the forceps until the excision of the iris has been completed.

In several cases of this character that have recently come under my care, it has been with great satisfaction that I have been able to place the coloboma in each eye in such symmetrical position that binocular fixation and vision at close range were perfect. Accommodation was encouraged as well as convergence and synchronous rotation of the globes, so essential for perfect coordination at reading distances. The value of this is enormous. It is procured in these cases at the most ideal time of a child's life and without glasses, and should removal of the crystalline lenses be required at a later period, the embarrassing muscle complications are reduced to a minimum. In making the corneal incision in these cases, I use the small angular keratome.

Very recently I have had the privilege of observing one of the patients on whom this operation was done fourteen years ago. The patient had learned to read



Optical iridectomy.

with her eyes before obtaining satisfactory correcting lenses and in the presence of a lateral nystagmus, but there was no diplopia or inconvenience in using the eyes. Her vision was 2/60 and 5/60 with lenses, and she read 2 M. type at 4 inches.

It is appreciated that there are many cases in which this procedure is inapplicable, but many do not realize how very few these instances are. Since I have approached my cases with the view of using this procedure as the operation of election, I have been amazed at its wide range of application. Little children cannot and will not wear thick and heavy glasses, yet this is imperative for a good result if the crystalline lenses are removed. This great disadvantage should supply the urge for other treatment.

This also opens up for discussion the advisability of placing the coloboma laterally in all cases of cataract extraction, rather than above, although this is not my purpose in this particular paper. But in those cases of juvenile cataract in which subsequent surgery is required it has proved to be a great advantage, especially as regards ultimate result.

In those cases in which needling has been done, I frequently find that only a capsule fills the space originally occupied by the lens. It is not necessary to repeat the needling on this. In fact, it may provoke dangerous inflammatory reactions. This may be treated as any type of secondary cataract. The method that gives the best result in most cases is that in which a straight lateral incision with a paracentesis needle is made through the cornea near the limbus, going through the cataract as well as the cornea. De Wecker scissors are then intro-

14. Findlay, E. K.: Am. J. Ophth. 8: 216-218 (March) 1925.

duced and made to cut the capsule first in one direction, and if this is insufficient to provide a clear pupillary area, another cut is made at right angles to this. The incised portions immediately separate from each other in an ideal case, and an enlarged clear pupillary area results.

But even with this improvement over the repeated needlings, it must be borne in mind that what to all intents and purposes is a foreign body is yet retained within the eye, and absorption must take place through inflammatory processes. Removal of the lens intact is the ideal but not always possible procedure. Careful examination will provide us with the information as to when it will be best to perform this type of surgical operation. It will also guide us as to another entirely different one.

There have been several instances in my recent experience in which, after making the incision in the cornea with the paracentesis needle, it has been possible to extract the empty capsule by means of an iris forceps made with the extreme end carried out as a small hook. This I have mentioned in connection with the case of E. K. Findlay.[14] This requires much care and most delicate traction. Here again the skill of the individual operator will make or mar this surgical procedure. Properly performed, the capsule will be made to pass out through this wound which originally appeared to be too small to permit it to do so. The possibility of incarceration of this capsule membrane in the corneal wound is an embarrassing situation and may be avoided only by good judgment. Likewise, a tough adherent capsule may prove resistant and tempt the operator to employ traction that may prove disastrous. But in the selected case and with the employment of the proper pulling force, we are repaid for our precaution with a perfectly clear pupil as well as an eye free from irritating débris that may induce iridocyclitis at any time. It is interesting to note in passing that Wharton Jones used the hook-shaped forceps for these cases in a similar manner.

CONCLUSION

It may be stated that it is with the hope of stimulating interest in these exceptional cases that this paper is written, and with the older technic at our disposal, which is far from satisfactory for these modern times, we are compelled to develop new resources for the relief of just such cases as are enumerated in these pages.

301 South Seventeenth Street.

Decrease in Blood Concentration in Burns.—We believe, therefore, that the observations recorded justify the conclusion that water introduction in sufficient quantities to restore blood concentration to within normal limits is of paramount importance in the treatment of burned cases. As a result of this type of treatment, it may be stated that only two patients gave any evidences of symptoms characteristic of intoxication in burns. In these cases unconsciousness at first prevailed; this, however, disappeared after restoration of the normal blood concentration. In all the other cases, the patients presented no untoward symptoms, such as delirium, unconsciousness, gastro-intestinal disturbance, hemoglobinuria or albuminuria. Whether such facts are to be interpreted from the viewpoint that restoration of blood concentration prevented the development of conditions responsible for these symptoms or that fluid introduction caused prompt elimination of toxic material so diluted as to be innocuous or both, remains a problem the solution of which can be determined only in the future. It would appear that fluid introduction is a rational method of treatment for extensive superficial burns.—Underhill, F. P.: *Ann. Surg.*, December, 1927.

CATARACT EXTRACTION

COMPARATIVE RESULTS OBTAINED BY THE COMBINED, SIMPLE AND KNAPP-TOROK METHODS OF PROCEDURE *

WALTER R. PARKER, M.D., Sc.D.
DETROIT

This report of 300 cases of cataract extraction, from the Ophthalmologic Clinic of the University of Michigan, is offered primarily as a study of the comparative results obtained in three series of 100 consecutive cases in which operation was performed respectively by the combined, the simple and the Knapp-Torok methods of procedure. As a matter of record, there is included a table showing the incidence of the following complications: loss of vitreous, spontaneous hemorrhage, iris prolapse, infection, secondary glaucoma, average astigmatism and cataract delirium. Cases in which iridectomy had been performed previously, either as a preliminary to extraction or for the relief of glaucoma, are omitted from the series.

The compilation of the visual results obtained after the cataract operation is usually made after one of two procedures has been followed. Either the percentage of the total number operated with a visual acuity of 6/12 or better is reported, or all cases showing pathologic changes that could account for the low vision are eliminated and the calculations based on the number remaining. Obviously, the latter method would show a much higher percentage of successful operations.

There is something to be said in defense of each method. The elimination of certain cases, however, especially when the vision is only slighly below the accepted standard of 6/12, injects a complication that is not always easy of solution. By including all cases, the result expresses the average risk the patient takes, and, for comparative study, the variables may remain as nearly constant as they would if one attempted to classify the cause of diminished vision in each case. Again, if one were to eliminate all conditions that might contribute to a faulty visual result, the character of the cataract should be considered, and this usually is not done.

In this report, the calculations are based on the total number of recorded cases. It includes a series of cases out of which were selected certain ones deemed suitable for the simple or Knapp-Torok method of extraction; in the remaining cases the combined method of extraction was used. Some of the patients operated on according to the combined method were suitable for one of the other procedures—one-eyed patients for instance—but in all cases classified as complicated the combined method was used, and the results are included in this report.

The choice of a simple operation was based on the presence of a large cornea, a dilatable pupil and occasionally the request of a fastidious patient. The Knapp-Torok operation was chosen only when the patient was 60 or more years of age, had a large cornea, had a dilatable pupil, and was apparently under good control. The Knapp-Torok operation was successful in more than 61 per cent of the attempted cases. When the capsule ruptured, the case was not included in the combined series, nor were accidental extractions in the

* Read before the Stetion on Ophthalmology at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 20, 1927.

capsule included in the Knapp-Torok series. In each case, the classification made prior to operation was adhered to.

In table 1 the actual visual results obtained in each case are given, together with the average visual acuity of 6/12 or better obtained in each series of cases. In determining the percentage of vision, the number given in the table as "not recorded" was deducted from the total number, and the calculation was made with the remainder. The records were complete in ninety-eight of the combined cases, eighty-nine of the simple and ninety-nine of the Knapp-Torok.

SPONTANEOUS HEMORRHAGE

A spontaneous hemorrhage occurred in one case immediately following delivery of the lens by the combined method. The patient was old, with advanced arteriosclerotic changes, but there was nothing noted that suggested the possible occurrence of this serious accident.

PROLAPSE OF THE IRIS

The iris prolapsed once in the combined, six times in the simple and twice in the Knapp-Torok series, or in 3 per cent of the total 300 cases. Atropine was instilled in all the simple cases before and at the time of operation. The same procedure was followed in the other cases except in those showing evidence of increased intra-ocular pressure.

TABLE 1.—*The Visual Acuity in Each Case and the Percentage of Vision 6/12 or Better*

	6/4	6/5	6/6	6/7.5	6/10	6/12	6/15	6/20	6/30	6/60	Less 6/60	Not Recorded	Total	Records Complete	6/12 or Better	% 6/12 or Better
Combined	1	9	19	26	6	9	5	5	5	6	7	2	100	98	70	71.4
Simple	2	11	16	20	9	5	4	8	6	4	5	11	100	89	63	70.7
Knapp-Torok	3	9	12	19	14	6	11	7	3	5	10	1	100	99	63	63.6
Total	6	29	47	65	29	20	20	20	14	15	22	14	300	286	196	68.8

It will be noted that the best average visual result of 6/12 or better was obtained in the cases in which operation was performed according to the combined method, in spite of the fact that all known complicated cases were included in this series.

It is to be regretted that in so large a number of the simple cases a record of visual acuity was not obtained.

In table 2 are recorded some of the more important complications occurring in each series of cases. The figure in each column, except the last, represents the percentage of occurrence. In the last column the figure represents the percentage of occurrence in the total number of 300 cases.

TABLE 2.—*The Relative Frequency of Some of the More Important Complications*

	Combined	Simple	Knapp-Torok	Total Cases	Percentage
Loss of vitreous	4	2	6	300	4.0
Spontaneous hemorrhage	1	0	0	300	0.33
Iris prolapse	1	6	2	300	3.0
Infections	0	1	1	300	0.66
Cataract delirium	3	0	1	300	1.33
Secondary glaucoma	0	0	2	300	0.66
Secondary cataract	14	30	3	300	....
Average astigmatism	2.6	1.9	2.6	300	....

LOSS OF VITREOUS

It will be noted that the highest loss of vitreous, 6 per cent, occurred in the Knapp series. Of the four combined cases in which there was loss of vitreous, two gave a vision of 6/5 and two of 6/12. Of the two simple cases, in one the final note was "perfect surgical result, illiterate"; in the other, the vision was not recorded.

The visual results of the six Knapp cases were as follows: one, 6/6; one, 6/7.5; one, 6/15; one, 6/20; one, light perception, and one, not recorded. The patient with a vision of light perception had a large central choroiditis. The one with a vision of 6/20 had poor control on the operating table, and it is possible that the result would have been the same if the combined extraction had been attempted. With this possible exception, the loss of vitreous in the recorded cases apparently did not play a part in the final results.

INFECTIONS

There were two cases of panophthalmitis, one in the simple and one in the Knapp-Torok series. Both were acute cases that evidently became infected, either at the time of operation or immediately after. Bacteriologic examination showed pneumococcus in one and *Staphylococcus aureus* in the other. The bacteriologic examination in the pneumococcus case was reported as negative at the time of operation and did not show any evidence of infection. The other case was reported as having given a sparse *Staphylococcus albus* culture but did not show any more evidence of infection than many other cases in which the patients did well

SECONDARY CATARACTS

It is sometimes difficult to state definitely just what effect a thin membrane may have on the visual acuity. Occasionally, a patient in whom the membrane appears complete will have a good vision, while another with an apparently similar secondary cataract will have the vision seriously impaired before it is divided, and will be markedly improved by an operation.

Slit lamp studies were not complete, and doubtless future reports will be more satisfactory in this regard. The recorded cases are given in table 3.

TABLE 3.—*Cases of Secondary Cataracts*

	Number	Operation
Combined	14	7
Simple	30	7
Knapp-Torok	3	2

The dense membranes that developed in the Knapp-Torok cases were classified as secondary cataracts. Two of those were divided and a good opening was obtained. The final vision in one case was 6/7.5; in one, 6/30. In the latter case, the patient had a degenerated vitreous and marked choroidal changes. The low vision obtained could not be attributed to the method of extraction employed. In one case the membrane was not divided, and the final record was not obtainable.

ASTIGMATISM

An attempt was made to determine the average amount of astigmatism present at the time of the last refraction. This, like the visual acuity, may vary with the time that elapsed after the operation.

The total amount of astigmatism in each series was divided by the number of recorded cases with the result in diopters as shown in table 4.

TABLE 4.—*Amount of Astigmatism Present*

Method of Extraction	Average Amount of Astigmatism, Diopters
Combined	2.6
Simple	1.9
Knapp-Torok	2.6

CATARACT DELIRIUM

Delirium was recorded in four cases, three in the combined and one in the Knapp-Torok series. In all, the patients made good recovery, and the final visual acuity was not affected by the temporary loss of coordination.

COMMENT

I am fully aware of the fact that the number of cases here reported is far too small to justify drawing definite conclusions. I am equally conscious that the results recorded are not absolute. Assuming, however, that the variables are more or less constant in each series, one has a basis for comparison. I find it easy to get an impression of the efficacy of certain clinical procedures that is not always confirmed by statistical study. It was the effort to check up as far as possible my results in cataract extractions after the three methods that led to this report.

A later refraction undoubtedly would have improved the average visual acuity recorded in the Knapp-Torok cases more than in the others, for the reason that there was a greater number in this series with a vision of

TABLE 5.—*Visual Acuity*

	Recorded Cases, Number	Vision 6/15 or Better, Number	Vision 6/15 or Better, per Cent
Combined	98	75	75.5
Simple	89	67	75.2
Knapp-Torok	99	74	74.7

6/15, one line below the 6/12 adopted as the standard of comparison; the number recorded as 6/15 were: combined, 5; simple, 4, and Knapp-Torok, 11. Adopting 6/15 as a standard of comparison, the result would be as indicated in table 5.

With 6/15 as the standard of comparison, the results are practically the same in all series, the flaw in the comparison being the fact that the combined series includes all types of cases, whereas the simple and Knapp-Torok groups were made up of carefully selected cases. What the results would have been if a hundred cases had been selected for the combined method of extraction I am unable to say, but it seems reasonable to assume that any method would give better results in selected than in routine cases. The combined operation included a large conjunctival flap and a free irrigation of the anterior chamber.

It is interesting to compare the frequency of occurrence of secondary cataract after the combined operation with that recorded after the simple extraction, the ratio being 14 in the combined to 30 in the simple.

While the age of the patient and the character of the cataract may play an important part in the frequency of secondary cataract, the possibility of a smaller capsulectomy and the increased difficulty of removing all the cortical matter when the iris is intact may contribute to the increased frequency of secondary cataracts in the simple cases.

CONCLUSION

1. In selected cases, the simple or Knapp-Torok method of extraction may give as good results as the combined method in unselected cases.

2. Secondary cataract is present more frequently in the simple than in the combined method of extraction.

3. By inference one may conclude that the combined operation in selected cases would give the best results and in general should be adopted as the safest method of procedure.

David Whitney Building.

LOSS OF VITREOUS IN CATARACT EXTRACTION *

EDWIN BLAKESLEE DUNPHY, M.D.
BOSTON

This paper is a survey of 2,560 cataract extractions performed at the Massachusetts Eye and Ear Infirmary between Jan. 1, 1915, and Jan. 1, 1925. This number does not include operations for traumatic or congenital cataract: it covers simply the ordinary senile cases.

The object of this survey is twofold: (1) to find out whether or not loss of vitreous at operation really makes much practical difference to the patient in after years, and (2) to classify the complications occurring in the several types of cataract operations.

The method employed was the study of the case records of all senile cataract operations for a ten-year period; and then, by follow-up letter and personal examination, a study of as many as possible of the cases in which vitreous had been lost.

It is realized, of course, that in this series the operators were men of differing experience. Some were chief surgeons, some assistant surgeons, and others house officers; consequently the results obtained do not have as much significance as if all the operations had been done by one man. Nevertheless, certain facts stand out, and these are presented for what they are worth.

The different types of operation are shown in table 1. In the combined group the great majority of cases were done in one stage, without any preliminary iridectomy.

TABLE 1.—*Types of Operation*

Type	Number of Cases
Combined	1,821
Simple	298
Intracapsular	441
Total	2,560

The simple extractions were usually done without iridectomy at all, but in fifty a small buttonhole iridectomy was made after delivery of the lens. The term "intracapsular" includes all types of operations in which the lens was extracted in capsule. Of the 441

* From the department of ophthalmology, Medical School of Harvard University, and the teaching service, Massachusetts Eye and Ear Infirmary.
* Read before the Section on Ophthalmology at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 20, 1927.

intracapsular cases, all but five were done by the ordinary Knapp method of traction alone, or combined with external pressure. The five other cases were done by the Barraquer suction method. Smith Indian operations were not attempted.

COMPLICATIONS

The major complications for the whole series are shown in table 2. These figures rather closely parallel those of Parker, whose survey of 1,421 cases was reported[1] in 1921. I feel that our 8.3 per cent loss of vitreous is creditable, considering the varying skill of the operators.

TABLE 2.—*Major Complications*

	Complications Occurring in 2,560 Cases		Parker's Percentages in 1,421 Cases
	No. of Cases	Per Cent	
Loss of vitreous	215	8.3	10.1
Infections	17	0.66	0.7
Expulsive hemorrhage	5	0.19	0.21
Prolapse of iris	13	0.49	0.49

The relative percentage of vitreous loss in the different types of operation is given in table 3. It will be seen that the incidence is markedly increased in the intracapsular group (18.8 per cent); also that there is an extremely low incidence in the group of simple extractions (0.67 per cent). For comparison, Parker's percentages for relative loss of vitreous are given.

TABLE 3.—*Percentage of Vitreous Loss*

Type of Operation	Cases	Vitreous Loss		Parker's Percentages
		Number	Per Cent	
Combined	1,821	130	7.1	10.7
Simple	298	2	0.67	6.4
Intracapsular	441	83	18.8	....
Knapp				10.2
Indian				19.7
Preliminary iridectomy				9.6

The infections are listed in table 4. Conclusions cannot be drawn from this classification.

TABLE 4.—*Infections*

Type of Operation	Total Cases	Infections	
		Number	Per Cent
Combined	1,821	13	0.71
Simple	298	0	0.00
Intracapsular	441	4	0.9

There were five cases of expulsive hemorrhage, as shown in table 5.

TABLE 5.—*Expulsive Hemorrhage*

Type of Operation	Total Cases	Expulsive Hemorrhage	
		Number	Per Cent
Combined	1,821	4	0.21
Simple	298	1	0.33
Intracapsular	441	0	0.00

The thirteen cases of prolapsed iris are classified in table 6. As would be expected, there was a relatively higher percentage of these cases in simple extractions; but the incidence even in this type of operation is not high.

1. Parker, W. R.: Senile Cataract Extraction, J. A. M. A. 77:1171 (Oct. 8) 1921.

ANESTHESIA

The types of anesthesia used in the total number of cases are classified in table 7. The types of anesthesia used in the 215 cases in which vitreous was lost are shown in table 8. Unfortunately, many of the records are not complete; and the method of anesthesia is not mentioned. It would be interesting to work out some relative percentages; but this would not give a fair consideration to the more recent types of anesthesia, such as deep orbital and subconjunctival injections, which were slowly coming into use during the last couple of years covered by this survey.

TABLE 6.—*Prolapsed Iris*

Type of Operation	Total Cases	Prolapsed Iris	
		Number	Per Cent
Combined	1,821	9	0.4
Simple	298	4	1.3
Intracapsular	441	0	0.0

TABLE 7.—*Type of Anesthesia in Whole Series*

Type of Anesthesia	Number of Cases
Cocaine instillation only	1,849
Van Lint lid injection	378
Subconjunctival cocaine	36
Deep orbital injection	2
Lid injection and subconjunctival cocaine	2
Lid and deep orbital injection	81
Not stated	212
Total	2,560

Prior to 1920, practically the only type of anesthesia in use at the hospital was cocaine instillation. After this date various safeguards began to be employed, such as paralyzing the orbicularis with procaine hydrochloride, and making use of deep orbital and subconjunctival injections. From 1915 to 1919 inclusive there were 136 cases of loss of vitreous, or 62 per cent of all such cases. From 1920 to 1924 inclusive there were only seventy-nine cases, or 38 per cent of the total 215. It would seem that with the advent of methods effecting anesthesia of the deep structures of the eye, the liability of vitreous loss was lessened.

TABLE 8.—*Type of Anesthesia in Vitreous Loss*

Type of Anesthesia	Number of Cases
Cocaine instillation only	140
Van Lint lid injection	31
Subconjunctival cocaine	2
Lid injection and subconjunctival cocaine	2
Lid and deep orbital injection	5
Not stated	35
Total	215

Bearing out this idea, I will call attention to another series of cataract extractions done at the same hospital in 1925, and reported last year by Dr. George Derby. This series consists of 200 cases. In ninety-nine of these, operation was performed by Dr. Derby. The remaining 101 operations were done by assistant surgeons and house officers. With a very few exceptions, the patients were given deep orbital and lid injections just before operation, and a corneal suture was used. There were only four cases in which vitreous was lost—a record of 2 per cent for the series.

I have often heard it said that loss of vitreous does not make a great deal of difference to the patient's visual acuity, provided, of course, that not too much is lost. It is common knowledge that, in a number of cases, a

patient who has lost vitreous may leave the hospital with a good looking eye and very good vision. Just what the condition of the eye will be three or four years after is not known. Therefore an attempt was made to get each patient in the loss of vitreous group to return to the hospital for observation. In all cases at least one year had elapsed since the operation.

A letter was sent to each of the 215 patients in this group by the social service department, requesting the patient to return to the clinic for examination. The response to this letter is shown in table 9.

From the seventy-four who returned, only fifty could be selected for study; the remainder had to be eliminated because of preexisting pathologic changes, or subsequent

TABLE 9.—*Results of Follow-Up Letters*

Dead	23
Unable to trace	110
Unable to return	8
Patients returning	74
Total	215

injuries and inflammations for which loss of vitreous could not be held responsible. In other words, the report includes only uncomplicated cases, with apparently normal fundi, and without a secondary cataract to cut down the vision. Cases showing vitreous opacities were examined with the slit lamp to rule out any active

TABLE 10.—*Method of Operation*

	Cases
Combined	32
Intracapsular	18
Total	50

TABLE 11.—*Occurrence of Vitreous Opacities*

	Cases
Opacities present	31
Media clear	19
Total	50

inflammation. Notes were made on the condition of the eye, and a careful refraction was done. The following observations were made:

In thirty-two cases, operation had been done by the combined method, and in eighteen by the intracapsular. Vitreous opacities were present in 60 per cent of the total number examined.

Although thirty-seven cases presented a normal looking operative wound, there were thirteen cases which showed definite complications in healing.

TABLE 12.—*Condition of Operative Wound*

	Cases
Pupil drawn up with iris pillar incarcerated	13
Normal healing	37
Total	50

The visual acuity in these fifty cases is shown in table 13. There were five cases of detached retina, all coming on within a year following operation. Three of these were in combined cases, and two in intracapsular cases. There was one case of collapsed eyeball with phthisis bulbi, following marked loss of vitreous in a combined case. Thus there were six cases in which the vision at best was restricted to shadows. If these six cases are disregarded, the average visual acuity for the remaining forty-four cases was 20/56.

TABLE 13.—*Visual Acuity*

	Cases		Cases		Cases		Cases
20/20	8	20/40	7	20/70	7	20/200	4
20/30	12	20/50	4	20/100	2	<20/200	6
Good result	20	Fair result	11	Poor result	9	Bad result	10

The results given in table 13 are very poor for a group of fifty cataract cases. The average visual acuity of 20/56 is low, and in addition there are six complete failures. The development of vitreous opacities after operation undoubtedly has an effect in lowering the visual acuity. I find on several record cards that these opacities were not present during the first few months following the operation, and that the patient had very good vision. A year or two later, opacities had developed in the vitreous, along with a decrease in the visual acuity. This is not always true, since there were several cases in

TABLE 14.—*Visual Acuity in Combined and Intracapsular Cases*

	Intracapsular, 16 Cases	Combined, 28 Cases
Average vision	20/50	20/59

which there was 20/20 vision in spite of the opacities. The opacities referred to in this series are not the very fine type that can be demonstrated in most senile eyes by a high-power ophthalmoscope.

Another factor that helps to lower visual acuity is the excessive amount of astigmatism which occurs in a number of these cases, as a result probably of abnormal healing of the corneal wound.

Table 14 gives a comparison of the visual acuity in the combined and intracapsular cases. The average is computed after the six total failures are disregarded. It will be seen that the better results were obtained in the intracapsular group. In this connection it is interesting to observe, in table 15, that the occurrence of vitreous opacities is considerably less in the intracapsular cases than in the combined.

TABLE 15.—*Vitreous Opacities in Combined and Intracapsular Cases*

	Intracapsular, 18 Cases		Combined, 32 Cases	
	Number	Per Cent	Number	Per Cent
Occurrence of vitreous opacities	9	50	22	68.7

CONCLUSIONS

The most striking fact in this survey is the poor showing made by the group of fifty patients in whom the vitreous had been lost. The low average visual acuity of 20/56, in addition to six complete failures, speaks for an indictment against loss of vitreous.

I feel that loss of vitreous would occur much less frequently if every cataract eye were properly anesthetized at operation by means of the Van Lint lid injection, combined with either a deep orbital or a subconjunctival injection. Our records show that in 62 per cent of the 215 cases, loss of vitreous occurred during the period when the only method of anesthesia used was cocaine instillation.

Loss of vitreous occurred in 8.3 per cent of the whole series. Relatively, intracapsular cases showed the highest incidence of loss of vitreous (18.8 per cent), while in simple extractions the incidence was very low (0.67 per cent).

520 Commonwealth Avenue.

[EDITORIAL NOTE.—This paper, together with the two papers of Drs. Fox and Parker, which precede it, and two papers by Drs. McReynolds and O'Brien, to appear next week, constitutes a symposium on ophthalmology. The discussion will follow the papers to be published in our next issue.]

Clinical Notes, Suggestions and New Instruments

TYPHOID MENINGITIS IN A TWO MONTHS OLD BABY *

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Typhoid meningitis is a rare complication of typhoid. There have been only thirty-three cases of typhoid meningitis reported in the literature. Statistics of the medical clinic of the Johns Hopkins Hospital show that out of 2,768 cases of typhoid there have been five cases of typhoid meningitis. In making a rather careful review of the literature I have been able to find only thirty cases of general meningitis in infants under 3 months old. Out of these, three cases occurred in infants from 6 to 8 weeks old, the great majority being due, in the order of frequency, to *B. coli*, streptococcus, meningococcus, pneumococcus and the tubercle bacillus. There was only one case of paratyphoid meningitis in children under 1 year. This patient was 7 months of age and originally had meningococcus meningitis, but the paratyphoid bacillus appeared in the fluid during the course of the illness. The case was reported by Applebaum.[1] This rarity of typhoid meningitis is probably due to the fact that these cases have not infrequently been overlooked. More lumbar punctures and more serologic and bacteriologic studies may probably show that this complication appears not infrequently.

A few remarkable cases of typhoid meningitis without intestinal symptoms or other typical lesions have been reported.

The following case is an example:

A boy, aged 2 months, was sent to the Providence City Hospital, Aug. 8, 1927, with the chief complaint of regurgitation. The family history was unimportant except that the patient's brother had typhoid at the hospital in 1924. The past history was unimportant. Two days before admission the mother noticed that the infant would not take the breast well and at times he would regurgitate his food. Because of these complaints the child was taken two days later to the North End Dispensary, from which it was referred by the nurse in charge as being a sick child. Physical examination on admission was negative except for a temperature of 101.5 F. A leukocyte count showed 4,000 cells. A blood smear showed 80 per cent polymorphonuclear leukocytes. Successive physical examinations for the following three days proved negative except for sustained fever ranging between 102 and 103 F. and leukocyte counts between 7,000 and 8,000. On the fourth day after admission the child was fairly ill, with a bulging anterior fontanel and a slightly rigid neck. There was definite nystagmus. All reflexes were active. There was a suggestive Babinski reflex. There was no Brudzinski or Chvostek sign.

A lumbar puncture was done and about 5 cc. of opalescent fluid obtained under no pressure, flowing very slowly. About 5 cc. of antimeningococcus serum was injected into the spinal canal. Because of the small amount of fluid obtained, a cisterna puncture was done at the same time. The spinal fluid appeared cloudy with a pressure of 30 mm. of mercury. Twenty-five cubic centimeters of cloudy fluid was withdrawn and 15 cc. of antimeningococcus serum given intracisternally. Direct smear from the fluid showed many polymorphonuclear cells and a gram-negative bacillus. Smears were negative for tubercle bacilli and meningococci. A culture of the fluid was taken on Loeffler's blood agar and in broth. All the cultures showed, the following day, gram-negative bacilli which grew luxuriantly.

On the fifth day after admission another cisterna puncture was done and 25 cc. of cloudy fluid was withdrawn without increased pressure. On direct smear and on culture from this fluid the same gram-negative bacillus was found. The mouse inoculated with this fluid survived the inoculation. On further study of this bacillus it was culturally found to correspond with the typhoid bacillus and was agglutinated by typhoid antiserum in the dilution of 1:12,800. A Widal test done on the blood was positive for typhoid in the dilution of 1:100 in the case of the blood and 1:10 with the spinal fluid. There was a weak Widal reaction for paratyphoid B. A Widal test done with the patient's blood and the organism isolated from the spinal fluid was negative, but this is often the case with freshly isolated strain according to Zinsser.[2] A blood culture proved sterile. Cultures from the urine and spinal fluid showed the presence of typhoid bacilli, which were agglutinated by typhoid antiserum in the dilution of 1:6,400. Cultures from the stool showed a paratyphoid B organism.

Successive daily cisterna and ventricular punctures were done to relieve pressure with no further injections of antimeningococcus serum, as the diagnosis had been established by now beyond doubt. The eyegrounds revealed bilateral optic neuritis. On the sixth day after admission the patient began having convulsions and moderate retraction. From now on his temperature kept ranging from 101 to 103 and his general condition failed until death, which occurred fifteen days after admission. At no time did he have any gastrointestinal symptoms. No autopsy could be obtained.

The next problem was to establish the source of the infection. Investigation of the parents of the infant showed a positive Widal test for typhoid on the mother and the two brothers (one of these brothers had typhoid at this hospital in 1924) and a weak reaction from the father. Stool culture from the father showed the presence of paratyphoid B. The first stool cultures from the two brothers proved negative. Stool cultures from the mother showed typhoid bacilli.

* Read before the Providence Medical Society, Oct. 3, 1927.

1. Applebaum: Arch. Pediat. 42: 607, 1925.

EXCISION OF BARTHOLIN GLAND CYSTS

G. H. TAUBLES, M.D., SAN FRANCISCO

The technic described below is offered to simplify the excision of Bartholin gland cysts by keeping the form of the tumor intact until the dissection is complete. This will obviate the deep incision sometimes necessitated when the cyst contents escape before the operation is completed and will keep the rather copious bleeding to a minimum.

With a syringe having a short 16 or 18 gage needle, the cyst contents are evacuated; the syringe is detached and the needle left in place. Then a second syringe filled with melted paraffin (melting point about 45 C.) is attached and enough paraffin injected to replace the fluid withdrawn. After the paraffin has hardened, the dissection will be found to be facilitated. A 10 or 20 cc. record syringe will hold enough heat to keep the paraffin fluid, and the syringe should be kept warm till needed. The addition of methylene blue or other dye will make the tumor more distinctly visible.

323 Geary Street.

2. Zinsser: Textbook of Bacteriology, 1927, p. 561.

Specialism in Medicine.—Whether we like it or not, specialism is here and is bound to stay, if not permanently, at least for a long season. As we have seen, the practitioner cannot acquire that all knowledge that was more nearly possible fifty or seventy-five years ago. He may be a practitioner, but not a general, an all practitioner. So specialists have evolved.—Herrick, J. B.: *California & West. Med.* **27**:183 (Aug.) 1927.

Special Article

THE RECTAL ADMINISTRATION OF ETHER AND OIL

AND MORPHINE, MAGNESIUM SULPHATE AND ETHER IN SURGERY AND OBSTETRICS *

Report to the Council on Pharmacy and Chemistry

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III. ANALGESIA IN CHILDBIRTH

Gwathmey, Donovan, O'Reagan, and Cowan,[43] in 1923, published the first of a series of papers entitled "Painless Childbirth by Synergistic Methods." They state that, after more than fifteen different formulas had been used, the procedure was changed entirely. Formula 16 directs the hypodermic injection of morphine in 2 cc. of a 25 per cent solution of chemically pure magnesium sulphate. This dose of magnesium sulphate without the morphine is repeated once or twice, and this is followed by the rectal injection of a mixture composed of:

	Gm. or Cc.	
Quinine hydrobromide	.65	gr. x
Alcohol	15	fl ʒiv
Ether	75	fl ʒiiss
Olive oil	30	fl ʒi

They state that reliance is placed on the synergism of ether and magnesium sulphate for the major effect. The rectal injection is made when the pains are four or five minutes apart and each lasting thirty seconds or more. The results varied but the majority of patients were helped and a few had comparatively painless labor.

Gwathmey, McKenzie and Hudson,[44] in 1924, published a second paper on "Painless Childbirth by Synergistic Methods," in which they report their experience with 200 additional cases. They state that while other methods require an expert anesthetist and are suitable only for institutions, the synergistic method is so simple that it can be used by any physician who knows the technic. They state that at first they used ten ingredients but that they now rely almost entirely on magnesium sulphate and ether, and that the formula had been changed over nineteen times. The patient is given a hypodermic injection of one-sixth grain (0.01 Gm.) of morphine in 2 cc. of a 50 per cent solution of magnesium sulphate and subsequently one or two injections of a similar dose of magnesium sulphate without the morphine if necessary. The mixture to be instilled into the rectum is the same as that previously directed except that only one half as much alcohol, 2 drachms (7.5 cc.) is used. Gwathmey subsequently [45] used twice as much quinine hydrobromide, 20 grains (1.3 Gm.) and increased the amount of alcohol to 3 drachms (11 cc.). Gwathmey, McKenzie and Hudson state that the synergistic effect is usually noted in fifteen minutes, the patient being quiet and sometimes sleepy. If exhausted, the woman may be anesthetized lightly, but analgesia with unconsciousness is the ideal sought. While they speak of analgesia with unconsciousness as the ideal, Gwathmey and Schwartz [31] distinguish sharply between anesthesia and analgesia. They say:

> The term synergistic anesthesia means the reciprocal augmentation of the action of one or more drugs upon one another with unconsciousness. Synergistic analgesia is the term employed when consciousness is present.

The numerous changes in formula and confusion of terms make it difficult to present an exact comparison of the work of different observers.

Pierce [46] reported the results observed in 200 cases in which the Gwathmey method had been used in St. Paul's Sanitarium in Dallas, Texas. He states that the method was used so commonly that nurses and interns had become familiar with it, and that the visiting physician merely had to ask that synergistic anesthesia be used.

Davis [47] states that Gwathmey's object is to ameliorate labor pains by a harmless, inexpensive method which can be used by a physician without special training in the home or hospital with drugs in common use, which have all been safely tried out in other fields of medicine previous to their use at the Lying-In Hospital. This tends to create a false sense of security and a belief that special training is not necessary to use this method successfully. About the same time Gwathmey said:

> With our present technic, chance is eliminated. The instillation is rarely expelled, the final result depending entirely upon the experience with this method and the judgment of the obstetrician.

If I have at times appeared to be severely critical of the method under discussion, it is partly because many inadvertent misleading statements must be pointed out. I am more nearly in agreement with the statement of Gwathmey's just quoted than with that of Davis, which, however, is essentially a reiteration of the idea expressed by Gwathmey with reference to synergistic colonic analgesia, and which is found in the quotation in the first paragraph of the second paper of this series.

It is obviously fallacious to argue that, because every one of several drugs has been used with safety under other conditions, a combination of all those drugs can be used safely in childbirth. Davis, as well as many others, repeats several of the statements of Gwathmey with reference to the uniform rate of evaporation of the ether from the oil, but it is almost self-evident that the ether must evaporate at a constantly diminishing rate and it is fortunate that it is so because less ether is required to maintain anesthesia than to induce it.

Harrar [48] says that rectal ether analgesia is the least likely to prolong labor if not used too early, and that in 2,000 cases during two years there was no danger to mother or child, that it is applicable in 70 per cent of all cases of labor in the hospital and, further, that it can be used equally well in the home, that no trained anesthetist is required and that it is not dangerous to the baby but that if pushed to complete anesthesia, which is not desired, the baby may be born deeply anesthetized. He says that it gives more relief than any other form of inhalation analgesia with which he has had experience, but that while it does not wholly prevent pain, it will abolish the most dreadful part of the ordeal in nearly all cases and is without danger to either the mother or child. He reported that an abscess formed at the seat

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43. Gwathmey, J. T.; Donovan, E. P.; O'Reagan, J., and Cowan, L. R.: Am. J. Obst. & Gynec. **6**: 456 (Oct.) 1923.
44. Gwathmey, J. T.; McKenzie, R. A., and Hudson, F. J.: Am. J. Obst. & Gynec. **8**: 154 (Aug.) 1924.
45. Gwathmey, J. T.: Am. J. Obst. & Gynec. **9**: 401, 1925.
46. Pierce, F. A.: Texas State J. Med. **21**: 419 (Nov.) 1925.
47. Davis, A. B.: Surg. Gynec. Obst. **40**: 868 (June) 1925.
48. Harrar, J. A.: Am. J. M. Sc. **170**: 256 (Aug.) 1925.

of magnesium injection in five cases, two of these in the thigh over the fascia lata, and particular caution is given to avoid injection at that site.

Hunt [49] reports the use of synergistic anesthesia (sic) in fifty cases of labor. Thirty-eight of the women were primiparas. He states that his work was begun before the publication of Davis' paper and that he used one-sixth grain (0.01 Gm.) of morphine in all except the last two, in which one-fourth grain (0.016 Gm.) of morphine was used as now recommended. In the early cases, the primiparas were not relieved long enough, but with one-fourth grain of morphine and the repetition of the dose of magnesium sulphate within thirty minutes and with the first instillation of ether into the rectum, the results have been better. Three of his patients received a second instillation of ether. Hunt says that Gwathmey has now used the method in between 4,000 and 5,000 cases in the New York Lying-In Hospital with not a single accident that could be in any way attributed to the method. He states that Gwathmey says in a personal communication:

> If an anesthetic is superimposed on an already analgized patient, this constitutes the one great danger. The patient should never be carried to the stage of anesthesia that is otherwise usual, without medication; . . . the patient need not be watched as in other methods; it is simpler than any other method and can be used anywhere.

Certainly this is not in agreement with the experience of others; and while a man of Gwathmey's experience may use the method with safety, it is positively not so simple in the hands of the inexperienced.

Wallbillich [50] does little more than review the salient points of Gwathmey's papers. Levy, in discussing Wallbillich's paper, says that the method of synergistic analgesia is particularly adapted for the rural districts because it gives the practitioner more time for other duties, but that the patient should not be left alone. King, in discussing Wallbillich's paper, states that this method has been adopted as a routine in the white obstetric service in the Charity Hospital in New Orleans. He says that it has considerable value but that it is not so efficient as Gwathmey claims, and that in a total of forty-nine cases, the results were very good in seventeen, good in nine, fair in eight, poor in five, and a failure in ten. Ether inhalation was necessary in seventeen about the time of the delivery of the head. Seven babies required resuscitation, some with difficulty. It is sometimes difficult to know when to give an anesthetic, and the best results are had when delivery occurs from three to four hours after medication has been started. Wallbillich says that he adhered strictly to the Gwathmey method, which includes the use of morphine, one-sixth grain (0.01 Gm.) in 2 cc. of 50 per cent magnesium sulphate containing 2.5 per cent of procaine hydrochloride.

Chrouch [51] used the technic described by Gwathmey in 1923. He gives protocols of twenty-six cases; he says it is not intended that the treatment should supplant entirely the use of inhalation anesthesia; that all but the more susceptible patients require small quantities of ether by inhalation during the second or third stage, and that the usefulness of the Gwathmey method lies in the fact that relief can be given late in the first stage and early in the second stage where heretofore the inhalation anesthesia had not been found practical.

49. Hunt, C. E.: Northwest Med. **24**: 546 (Nov.) 1925.
50. Wallbillich, C. A.: New Orleans M. & S. J. **78**: 1 (July) 1925.
51. Chrouch, L. A.: J. Michigan M. Soc. **25**: 59 (Feb.) 1926.

Deutschman [52] apparently summarizes the views held in October, 1926, at the New York Lying-In Hospital. He says:

> The preliminary preparations consist in gaining the confidence of the patient by pleasantly emphasizing the importance of cooperating in this procedure. The patient receives a high soap-suds enema followed by a rectal irrigation of tepid water, until the rectum is absolutely clear. She is to be placed in a quiet room, and, if no room is to be obtained, the bed should be screened. Her eyes are covered with a piece of cloth and the ears closed with cotton so as to keep out all the external stimuli.

The procedure is begun when labor has advanced to the stage of cervical dilatation of from 2½ to 3 fingers and uterine contractions at intervals of from six to seven minutes and of from ten to twelve seconds in duration. (This is earlier than was formerly recommended.) One-fourth grain (16 mg.) of morphine in 2 cc. of 50 per cent solution of magnesium sulphate is injected intramuscularly. If this is too sedative, the enema is not given until the effect has worn off; but if no effect follows the first injection in twenty minutes, 2 cc. of 50 per cent magnesium sulphate without morphine is injected. Slight drowsiness, which is the effect desired, invariably follows the second injection. The patient then receives the enema which has already been described. Lubrication of the anal region, buttocks, thigh and rectum is recommended. The lubricated rectal tube is inserted slowly high up in the rectum between contractions with the patient lying on the left side and hips slightly elevated to permit colonic absorption. Deutschman says:

> Following the administration of this retention enema, the patient usually becomes drowsy, followed by a semi-stuporous condition, resting peacefully between the uterine contractions and only moaning faintly during the height of pain, the frequency and duration of which is not affected.

The patient is not disturbed for two or three hours but is watched because precipitate delivery often occurs. If no analgesia follows the enema, a third injection of 2 cc. of 50 per cent magnesium sulphate is required. He says that this fortifies the synergistic effect between the magnesium sulphate and the ether and the patient is relieved during the stage of dilatation. The cervix is invariably found much thinned out or completely obliterated when the patient is examined two or three hours after the rectal instillation. In case of occipito-posterior presentation, spontaneous rotation occurs and frequently the part is presented on the perineum ready for delivery, the patient being calm and at complete rest.

> The effect of this procedure lasts about four hours, after which it begins to wear off and, if the patient by this time is not ready for delivery, the whole treatment may be repeated, leaving out the morphine, without jeopardizing the health of the mother and baby.

Six cases are detailed in which the results were negative because of faulty technic.

It was formerly recommended to insert the tube four inches. The high injection is in harmony with the recommendation of Smirnoff,[53] who found that the absorption takes place from the colon almost exclusively. If there is occasional faulty technic with those who have used this method so frequently, it is obvious that the technic is not so simple as the general reader would be led to believe. In one case the procedure was instituted

52. Deutschman, D.: M. J. & Record **124**: 421 (Oct. 6) 1926.
53. Smirnoff, S. A.: Arch. f. klin. Chir. **141**: 151, 1926.

too early, and Deutschman says, "This case shows that when this method is administered too prematurely, labor may be delayed for several hours." In summarizing his results, he says that the technic is comparatively simple and may be carried out at home or at the hospital. It is devoid of any danger to mother or baby; it affords the parturient patient rest of several hours, and it conserves her energy for the second stage. It is to be observed that in this paper the stress is laid wholly on the synergistic action of the magnesium sulphate with the ether, but it is also to be observed that the dose of morphine is 50 per cent larger than that recommended by Gwathmey, McKenzie and Hudson.

Randall,[54] reports the results of the use of Gwathmey's method in obstetrics during one year and says that the patient who seems to derive the greatest relief is the primipara with a primary occipitoposterior presentation with or without premature rupture of the membrane. He says that it often shortens the second stage, that no inhalation anesthesia is necessary at birth, but that it is not to be used as a routine measure.

Spangler [55] speaks with enthusiasm of the use of synergistic analgesia in obstetrics. Multiparas with babies of normal size generally do not require additional relief; but ether by inhalation is commonly required in primiparas when the head passes over the perineum.

Stevens [56] reports thirty-six cases of synergistic analgesia in labor. Eighteen of the women were primiparas. Four patients vomited after the enema. Thirteen had extremely easy labor. Amnesia was usually complete, but ether by inhalation was commonly employed for delivery. Stevens used one-sixth grain (0.01 Gm.) of morphine in 2 cc. of a 50 per cent solution of magnesium sulphate with cervical dilatation of two fingers or more with pains four or five minutes apart. His results are in harmony with the general observation that, the less morphine used, the more frequently is the inhalation of ether necessary. He gives constant attention to the patient for some hours.

White [57] says of rectal analgesia combined with ethylene oxygen in obstetrics, "While this method does relieve the pain to a great extent in all cases and completely in a few, there are a number of patients during the end of the second stage of labor who do not obtain the relief they expect and which is often promised them." He says that prolongation of labor may occur when ethylene-oxygen is added to rectal analgesia, but is not likely to occur if care is used in the administration.

Moore [58] reports 100 cases: seventy-four excellent, seventeen good, six fair, three poor. He thinks that the use of the method is as easy in the home as in the hospital. Guess,[59] Poliakoff [60] and Lewis [61] add little to our knowledge of the problem.

Harrar [62] reported at the thirty-ninth annual meeting of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons the results of three years of study of Gwathmey's method with a record of 5,800 cases in the New York Lying-In Hospital. He says: "By this we do not claim painless childbirth, but it gives relief to the agonizing part of the ordeal of labor." This paper and that of Deutschman may be accepted as representing the present views of those who have had the greatest experience with this method. Harrar classifies the cases with reference to the results as (*a*) those in which there is perfect analgesia without the inhalation of ether; (*b*) those in which it is necessary to administer ether by inhalation at the time of delivery; (*c*) those in which there is only slight relief from pain; (*d*) those in which there is no relief. The cases in *a* and *b* reached nearly 90 per cent of the total in the latter part of 1924, but they fell to about 56 per cent nearly a year later and rose during 1926, but never so high as at the time mentioned in 1924. Cases in *c* and *d* must be considered nearly complete failures, and it is astonishing to find such variations in the hands of those with the greatest experience. It seems most probable that the error lies in estimates of the degree of relief and not in true variations of effects of the analgesics used; but this serves to illustrate the difficulties in evaluating the method. No explanation of these variations is offered. Harrar says:

> With very large women, or when the ether instillation has no effect or even excites the patient and the birth is anticipated within two hours, a second instillation of one-half the original amount may be given at once. At times in nervous primiparas, or where for some reason we would like to start the analgesia before the pains and the cervical dilatation has attained the desired state, ⅙ grain morphine can be given with the first 2 cc. of magnesium sulphate solution, and in one-half hour a second ⅙ grain morphine with the second 2 cc. magnesium sulphate, then waiting for the strong pains and three finger tips dilation of the cervix before giving the ether instillation by rectum.

A history of the use of morphine in childbirth would almost certainly show that where other things are equal the danger to the child increases with the increase in the dose of morphine above a minimum that has not been established accurately, but which is apparently one-sixth grain (0.01 Gm.) of the sulphate for a woman of average size, and it is unfortunate that more exact directions are not given for increasing the dose of morphine by 50 per cent above that recommended in the earlier paper, more especially as the dose of ether is now increased also by 50 per cent in certain cases.

It is undeniable that morphine in all doses, except the smallest, perhaps, tends to retard labor and that anything that retards labor (with special exceptions) is inimical to the child. Royston [63] stated that the average duration of labor was one-half hour longer when morphine and scopolamine were used, the whole effect being attributed to the morphine, of which the usual dose was one-sixth grain (0.01 Gm.), presumably the sulphate. He stated that the effect was more marked when the morphine was given within less than four hours preceding the birth of the child.

Harrar's study adds little to our knowledge of the subject beyond the facts just stated; he does not give contraindications, statistics concerning the fetal or maternal death rate associated with childbirth, or the number of children that were born in such a state of asphyxia that they were resuscitated with difficulty. The data concerning these are important, because a child that could be resuscitated only with difficulty in an institution such as the New York Lying-In Hospital by skilled obstetricians would probably have died in the hands of the unskilled general practitioner, and Gordon [64] says that the great majority of births are in the hands of the unskilled general practitioner, who does not improve materially, while the skilled obstetrician is improving his technic constantly.

54. Randall, L. M.: J. Iowa M. Soc. **16**: 401 (Sept.) 1926.
55. Spangler, P. E.: Northwest Med. **25**: 515 (Oct.) 1926.
56. Stevens, W. J.: Canad. M. A. J. **16**: 804 (July) 1926.
57. White, C. E.: J. Oklahoma M. A. **19**: 70 (March) 1926.
58. Moore, R. B.: J. Maine M. A. **16**: 181 (Oct.) 1925.
59. Guess, J. D.: J. South Carolina M. A. **21**: 267 (Nov.) 1925.
60. Poliakoff, N.: West Virginia M. J. **22**: 401 (June) 1926.
61. Lewis, C. H.: California & West. Med. **25**: 469 (Oct.) 1926.
62. Harrar, J. A.: Am. J. Obst. & Gynec. **13**: 486 (April) 1927.
63. Royston, G., in discussion on Harrar: Am. J. Obst. & Gynec. **13**: 671, 1927.
64. Gordon, C. A.: Am. J. Obst. & Gynec. **13**: 501 (April) 1927.

Ecke and Taubert [65] used Gwathmey's original method in sixty-five cases of labor and state that there was some asphyxial condition in all the children in whom morphine had been used, but that this was not the case when "pantopon" (pantopium hydrochloricum) had been employed. It seems incredible that the mere substitution of a mixture of opium alkaloids as represented by pantopon for a therapeutic equivalent of morphine could cause such a striking difference; hence one must suppose that relatively less of the pantopon was used. They report no mortality for mother or child though dangerous delay occurred in some cases. Constant attendance on the part of the physician was required. The authors state that the contraindications include all conditions in which ether and narcosis are contraindicated, such as high fever, high grade narrowing of the channel, and various pathologic conditions, but that eclampsia is not considered a contraindication. They deprecate the use of the term "narcosis" because of the dread that it causes. They state that the use of the method in the private home is not in the interest of the woman, those about her, or the physician because of the psychic behavior with loss of inhibitions, motor unrest, hallucinations and talkativeness, which often prove embarrassing to all. They state that amnesia was complete in 60 per cent of the cases, but they did not observe synergistic action between the morphine and the magnesium sulphate.

Loerincz [66] employed the method in fifty cases of labor with excellent results. He injected 0.01 Gm. of morphine sulphate with 2 cc. of 50 per cent magnesium sulphate solution and used a somewhat higher percentage of ether with the oil than Gwathmey recommended. He states that ether is the principal analgesic but that the magnesium sulphate is an important factor in the relief of pain. The latter statement, apparently, is not based on personal study. Loerincz estimated the duration of labor with great care and gave the enema four hours before the calculated time of birth; but the enema was not administered when he had reason to anticipate delay during the painful later stage. He recommends it especially for nervous, weak women who suffer from psychic disturbance, but he especially enjoins consideration of advantages and disadvantages rather than its routine use. A few women were so deeply anesthetized that abdominal pressure was interfered with. None of the children were cyanotic.

Finger [67] used the method on Loerincz's recommendation. The results were so good in the preliminary trials that he then used it systematically. Some women groaned involuntarily, but pain was lessened or abolished in every case. The contractions became weaker in some, stronger in others. There was psychic disturbance such as Ecke and Taubert described, and some women threw themselves about for a few minutes shortly after narcosis began. Nearly half of his patients vomited. Hemorrhage varied from 20 to 1,230 Gm., and averaged 380 Gm. There was no injury to the intestine. All children were born of good color. Analgesia lasted until birth was complete when this occurred within three hours, and the repetition of the dose of magnesium sulphate caused lessening of the pain for two or three hours longer. One can count on analgesia for two or three hours after the enema; the shortest period after dilatation of three fingers before labor was completed was two hours, the longest twenty-five, the mean seven hours; hence, if one follows Gwathmey's method, the analgesia will seldom continue to the end. Finger maintains that one should give aid with the beginning of severe pain, and not be guided solely by the degree of dilatation or the frequency and severity of contractions. Many suffer more severe pain during the period of dilatation than later, and severe pain often lasts more than four hours. He describes the technic to be followed under varying conditions. He does not consider the constant attendance of the physician necessary, though he thinks that the effect of the enema should be observed for a time. He calls attention to essential changes in the method made by Gwathmey after Finger had begun his observations.

Hadjidakis [68] recommends modification of the procedure to suit the individual's needs and this requires experience. He thinks it suitable only for institutions because, owing to excitement, constant attention is sometimes required. He found that pain was diminished for periods of from three to four hours, after which the injection of magnesium sulphate did not influence the pain; hence he used this method in the later cases only when he expected spontaneous delivery. He became convinced that it should be started only after dilatation had reached four fingers in primiparas, and later when the contractions are poor than in those cases in which they are good. Thirty-eight of his seventy patients were primiparas, and there were seven failures among these, all caused by using morphine too early. Forty-five of the women were unconscious at the time of the birth; twelve vomited; the activity of contraction was influenced in four. One child was severely asphyxiated, necessitating artificial respiration during ninety minutes, after which the child cried; but it died two days later. Acute lobar pneumonia and pleural hemorrhage were found at the postmortem examination.

Martin and Jackle [69] used the Gwathmey method in about 100 cases of labor. They say that they cannot agree with previous published German reports. Their results in fifty cases were satisfactory; in these the women slept quietly through the entire course of labor and remembered little about it; there was little disturbance in the after-birth period, and all the children in those cases were born of good color. Against the good results in these fifty cases they contrast the results in others and warn against the general use of the method. Like all new methods it requires experience, and especial care concerning dosage is necessary. They say it is not necessary to know in what percentage of cases one mishap or another is to be expected, but the obstetrician must know everything that may happen. Some women failed to "bear down," and forceps were required in cases in which spontaneous delivery had been anticipated; increased intestinal activity was pronounced, and one case of intestinal hemorrhage occurred. A line of frigidity along the colon was often observed, but no serious consequences followed. Many showed restlessness to a degree that had not been anticipated after examining the literature, and some were kept in bed with difficulty. Many of the new-born exhaled ether; respiration was extremely superficial at first, but stimulation of the skin was followed by increased respiration and lively movements, but some were saved only with difficulty and with prolonged efforts. In two cases the new-born exhaled ether after

65. Ecke, A., and Taubert, R.: Zentralbl. f. Gynäk. **50**: 1111 (April 24) 1926.
66. Loerincz, B.: Zentralbl. f. Gynäk. **49**: 108, 1925.
67. Finger, J.: Monatschr. f. Geburtsh. u. Gynäk. **73**: 162 (May) 1926.
68. Hadjidakis, G. E.: Wien. klin. Wchnschr. **51**: 1482 (Dec. 16) 1926.
69. Martin, E., and Jackle, K.: Monatschr. f Geburtsh. u. Gynäk. **74**: 319 (Oct.) 1926.

delivery that had proceeded without disturbance, and their respiratory passages were free from the beginning, but both children died—one on the third day, the other on the tenth day. At autopsy the air passages were free, the mucous membrane was in a state showing severe irritation, and there were evidences of beginning pneumonia in both cases. Otherwise these children were completely healthy and there was no doubt that they were victims of ether as the result of its rapid passage from the mother. They consider that the numerous disadvantages that cannot be foreseen are sufficient to render it unsuitable in practice.

Schiffman and Seyfert [70] present an analysis of their results in twenty-two cases of labor with the Gwathmey method. They do not consider the method suitable for prolonged labor, and it is impossible to foresee whether it will be long in many cases. They recommend that it be instituted later than Gwathmey recommended. Some patients became restless, and the effects on the contractions were variable. They consider that it is an addition to the technic of labor but requires constant supervision.

Vogt [71] calls attention to the general danger of the method when it is used by those who have no appreciation of its disadvantages. He states that small doses of morphine stimulate the uterus and large doses depress it, while magnesium sulphate has only a depressant action. He calls attention to an almost total lack of animal experiments bearing on the synergistic action of the morphine and magnesium sulphate, and to the significance of the rectal irritation induced by the ether in surgical anesthesia. He concluded that the method is too dangerous for use by midwives and that this circumstance precludes it from general use in the household in Germany, since constant supervision by a physician is necessary. He believes that it is suitable for use in those cases in which previous labor has been smooth and there is reason to expect undisturbed progress with the termination of labor within four hours. He considers diabetes, eclampsia with convulsions, eclampsia with icterus, diseases of the respiratory passages and lungs, liver or kidneys and circulatory disturbances contraindications. His experience was with primiparas mainly; he used morphine (sulphate) in doses of 0.006 Gm. with the solution of magnesium sulphate one hour before the instillation of the ether and oil. The results were satisfactory in 95 per cent of his cases, but ether was used by inhalation in many cases when the head appeared. He did not observe injuries to the child or the mother.

COMMENT

It may seem superfluous to discuss the necessity of relieving the intense pain of childbirth, because it is the obvious duty of the physician to alleviate this to the utmost that is consistent with the safety of the child, and sometimes the physician must assume a definite risk to the life of the child. This raises a problem about which there will never be complete agreement, but which enters into every discussion such as the present review.

Hirst [72] said that many expectant mothers believe that physicians are callous to their sufferings and resent that attitude. If such an attitude appears to exist on the part of many physicians, it probably arises from a widespread belief that pain cannot be prevented without greater danger to the child than the circumstances justify. Potter [73] said, "I have found nothing that would assuage and alleviate the pains and agonies of the second stage of labor which, to my mind, is the desired aim of modern midwifery."

There is often an apologetic tone used for resorting to methods which obviously involve some danger, and it is often asserted or implied that the nervous temperament of modern woman makes her suffer more than women did formerly. Gwathmey et al.[43] refer to the use of analgesics in labor among the ancient Hebrews, and the severe pains suffered by a barbarian are mentioned in the Medea of Euripides, 431 B. C.:

> . . . in vain I bore you, and was torn
> With those long pitiless pains when you were born.

It is impossible to draw a line with exactness between the rights of the mother and those of the child, and it is obvious that the comfort of the mother often conflicts with the safety of the child. When such conflict arises, the obstetrician must decide according to the dictates of his conscience but with an accurate appreciation of the measure of relief to be expected and the danger that he incurs. The following discussion is intended primarily for the general practitioner; hence certain facts are included with which specialists in obstetrics are familiar.

Woodbury [74] estimates that there are 100,000 stillbirths and 100,000 deaths in the first month of life annually in the United States. He also states that the maternal death rate associated with childbirth is 19.6 per hundred thousand of population, from which it is apparent that there are about 20,000 maternal deaths, or a total of about 220,000 deaths associated with childbirth annually. Gordon [64] quotes Woodbury's figures (at least he mentions the same infant death rate) for the mortality during the first month of life and says, "Reduction of these figures may depend as much upon the conduct of labor as upon the character of the prenatal care." He makes no such comment regarding stillbirths, but it is almost certain that the total of reported stillbirths stands in close relation with early infantile death, and one can sometimes see statistics in which a high infant mortality follows a low rate of stillbirths; in fact, this relationship is apparent in the figures cited by Gordon with reference to two hospitals in which the general principles of conservative obstetrics are observed. Gordon analyzes the causes of death associated with 6,562 consecutive labors in those hospitals, but he does not discuss the use of anesthetics and analgesics except to say, "Morphine is freely used only in the first stage of labor with ether for operative procedure and delivery of the head."

Davis [75] says that Potter's method of podalic version results in a comparatively high fetal mortality, indicating that Potter believes that the comfort and condition of the mother take marked precedence over the safety of the child. Potter's figures do not indicate a high fetal mortality—stillbirths and deaths within the first twelve days of life—in his own experience; in fact, it appears to be lower than that in the two hospitals to which reference has been made. The fetal death rate was high in the hands of some others who used Potter's method. These facts are cited merely to indicate the difficulties one encounters in attempting to evaluate a

70. Schiffmann, J., and Seyfert, W.: Wien. klin. Wchnschr. **39**: 131 (Jan. 28) 1926.
71. Vogt, E.: Zentralbl. f. Gynäk. **50**: 65, 1926.
72. Hirst, in discussion on Gwathmey (footnote 45).
73. Potter, J. W.: Am. J. Obst. & Gynec. **1**: 560, 1920-1921.
74. Woodbury, R. M.: Pub. 158, Children's Bureau, U. S. Dept. Labor, cited by Adair, F. L.: Am. J. Obst. & Gynec. **13**: 113, 1927.
75. Davis, E. P., in discussion on Potter: Am. J. Obst. & Gynec. **1**: 637, 1920-1921.

given method, such as that of Gwathmey, with reference to these opposing interests.

It is certainly possible for the skilled anesthetist to lessen the intense pain of childbirth by one of several methods with relatively little danger to the child and with almost no danger to the mother, but it is hardly open to question that every method of ameliorating pain involves a measurable risk to the child when used by one who has not acquired skill in the technic. The natural consequence of this is that every method causes a greater relative number of infant deaths in the hands of unskilled practitioners than in the hands of the skilled obstetrician. Hence a method that must be condemned unreservedly in the hands of the unskilled may be highly desirable in the hands of the specialist in obstetrics. It is not necessary to repeat what has been said in the first and second sections of this paper, but the discussion of the first section should be borne in mind.

SUMMARY

The use of morphine during the first stage of labor and ether or chloroform for the second stage appears to be the accepted procedure. Morphine with chloroform appears to present special dangers, but our data are insufficient for final judgment.

Morphine sulphate in the dose of 0.01 Gm. (one-sixth grain) for a woman of average size, about 60 Kg. (125 pounds) is virtually without danger for the woman and presents little danger for the child, provided it is not used within less than four hours of delivery and provided the subsequent use of ether is made with due understanding of the action of morphine on the respiratory center.

A study of the literature of morphine and scopolamine convinced me that the use of morphine in doses exceeding an average of 0.01 Gm. (one-sixth grain) for the woman of average size and the subsequent use of ether or chloroform involve danger to the child and the danger rises as the dose of morphine increases. This applies to the average of many reports as compared to the averages of statistics, and it does not necessarily apply to the use of morphine by specialists in obstetrics and anesthesia.

No method of inducing analgesia is suitable for universal use. So-called painless childbirth is frequently a most difficult problem. The general practitioner is often misled into believing that he can secure better results by the method that he reads about than by the methods with which he is familiar, when in truth it presents no essential advantage, and, on the contrary, it will prove inferior in his own hands to that with which he has acquired a certain degree of skill. In view of this, the commercial exploitation of proprietary products based on the Gwathmey formulas is potent for much harm, since it will inevitably tend to promote the thoughtless and ill advised use of the method.

It is proper to assure a woman that her pains will be mitigated when the Gwathmey method is used skilfully, but no woman should be promised a painless labor. Gwathmey and his associates have used the term "painless childbirth" in several papers, but they admit that only a small proportion of their patients (or those who are treated by this method) have relatively painless labor. The use of the term perpetuates a dangerous misunderstanding.

It seems obvious that the dosage of morphine and that of ether should be calculated for the weight of the patient. The maximum dose of ether used after an average dose of morphine during labor that does not exceed three hours without complications is about 1.25 cc. per kilogram of weight, or about 2½ ounces for a woman of average size. Obviously, the bowel should be emptied when labor is complete.

The quinine used in the Gwathmey method frequently overcomes the tendency of the morphine to prolong labor, but labor is sometimes prolonged even with large doses of quinine.

One great difficulty in the use of the method is the impossibility of estimating correctly the interval that will elapse before labor will be terminated, with the consequent uncertainty as to the time that the enema should be administered.

The talkativeness mentioned by several is a minor or major disadvantage according to individual circumstances. The motor unrest is a great disadvantage in the absence of suitable attendants.

The rectal irritation is usually a minor disadvantage, but it is sometimes important. The great variations in the frequency of vomiting reported by different observers seems to show (as one declared) that it is usually ignored in reports. It probably occurs less frequently than after inhalation anesthesia. Of course, it should be less frequent in labor when smaller doses of ether are required than when deep surgical anesthesia is induced.

The question of the value of magnesium sulphate with morphine and ether cannot be answered at present. Many state that it has clinical value, but there is no satisfactory evidence that it potentiates the action of morphine or that of ether, and animal experiments show that there is a summation of the toxic effects. There is probably a like summation of therapeutic effects.

A darkened room, quiet and freedom from disturbance promote the analgesia.

The most striking fact brought out in this review is the pressing need of systematic experimental studies of the drugs used in labor, and statistical studies showing as accurately as possible the analgesic actions on women and the toxic effects on the child.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

TYPHOID VACCINE (See New and Nonofficial Remedies, 1927, p. 365).

Abbott Laboratories, North Chicago.

Typhoid Prophylactic (See New and Nonofficial Remedies, 1927, p. 366). Also marketed in 5 cc. vials containing 1 billion killed typhoid bacilli per cubic centimeter; in 20 cc. vials containing 1 billion killed typhoid bacilli per cubic centimeter.

Correlation Between Mental and Moral Activity.—Investigations give evidence of a very close correlation between mental and moral superiority. According to Terman, superior children rank high in evenness of temper, will power, obedience, dependability, conscientiousness and unselfishness. Occasionally they rank low in social adaptability and leadership because of their preference for books and their association with older pupils whose physical maturity dwarfs the initiative of the younger playmates.—Bird, Grace E.: *Mental Hygiene* **11**:258 (April) 1927.

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SATURDAY, DECEMBER 31, 1927

THE HOSPITAL AND THE SCIENTIFIC OBSERVATION OF PATIENTS

The rôle of experiment in medicine—a characteristic of modern progress in the domain of the physician's activities—was aptly outlined by Frederic S. Lee [1] in his Jesup Lectures for 1911. He pointed out that in contrast with the ancient physician the modern devotee of medicine does not rely on a philosophical system. Like his forerunner, however, he, too, observes phenomena under their natural conditions; but he goes further than this and alters the conditions, and thus he obtains an alteration of the phenomena and a new standpoint from which to view them. He may apply to the cure of disease past experience, it is true, but it is past experience that has been put to the test of modern experiment. Moreover, by the aid of further experiment he pushes out into the unknown, sees disease from unusual standpoints, and devises new and hitherto unsuspected methods of dealing with it. If he forms a working hypothesis, it, too, has to be submitted to experimentation, for men of medicine have little patience with a new idea that has no experimental evidence in its favor.

It has been said that man tried for a thousand years to learn about his environment solely by exercising his reasoning powers, and the result was the dark ages. But in the seventeenth century there was introduced into his armamentarium a new weapon, a new method, the method of experiment. Man began to observe, to think, to try. Before he had only thought. The past three hundred years may be set apart from all that preceded as the Age of Experiment. What is called the scientific method, the same comment concludes, has almost banished darkness from the earth, has almost annihilated distance and has lengthened time. Such statements should not be interpreted as a belittlement of the helpful contributions to medicine that have come through so-called empiricism. Experience plays a part that need not be overshadowed by experiment. But the progress that arises from empiric discoveries tends to be slow. Harris and Butt [2] have recently indicated, for example, how physicians working throughout the ages were able to cope with infection and disease but imperfectly. It was only when trained research workers devoted themselves to a study of the fundamental causes of disease, they add, that real significant progress was made; more was then accomplished in a half century than in all the past history of the world.

The mention of experiment in connection with human disease, however important it may appear to be from a logical analysis of the essentials of medical progress, sometimes brings "fear and trembling," sometimes even outspoken resentment to those who are interested in the welfare of the sick. It may even be openly alleged that the patient is liable to be made an unwilling subject—a veritable *Versuchstier*—in the scheme of experimentation to advance medical knowledge. The boldest critics sometimes glibly apply the term human vivisection to the work of the medical clinic where modern science is engaged in the study of disease. To these Cole [3] of the Rockefeller Hospital, New York, has administered a well deserved rebuke. The student of disease, he remarked at the dedication of the new clinical buildings at the University of Chicago, must be constantly seeking for knowledge that cannot be obtained by observation alone. He must employ the other steps in the method of experimentation. This does not mean that patients must be the subjects for experiment—far from it. In Cole's experience the application of new and untried measures to patients in any hospital is in inverse ratio to the scientific atmosphere there existing. It is only in hospitals directed by the ignorant and by charlatans that unusual and untested measures are employed. Indeed, he adds, one important purpose of the experimental laboratory is to make certain that any measures to be applied to patients will be helpful and not harmful. The scientific observer of disease does no more harm to his patient than the astronomer does to the stars when he directs his gaze on them through the telescope. When necessary, experimental studies must be made on animals, under proper conditions to avoid unnecessary pain. In most of the experimental work in the laboratory of medicine the materials used are not animals but bacteria and excretory fluids, and the instruments used are not knives and trephines but microscopes and chemical reagents.

A proper realization of these well expressed sentiments should serve to remove the occasional repugnance to the conception of a hospital as a laboratory. As Cole pointed out in his Chicago address, with the development and growth of modern scientific medicine and with the general recognition of the great blessings which it has bestowed, the dread of entering hospitals

1. Lee, F. S.: Scientific Features of Modern Medicine, New York, Columbia University Press, 1911.

2. Harris, F. S., and Butt, N. I.: Scientific Research and Human Welfare, New York, Macmillan Company, 1924.

3. Cole, Rufus: Hospital and Laboratory, Science 66: 545 (Dec. 9) 1927.

and the reluctance to send our friends into them have largely disappeared. The rich as well as the poor, the powerful and influential as well as the weak and obscure, are rushing to fill our hospital beds, until society has become unable to supply the demands. Moreover, it has come to be recognized, as Cole properly stresses, that the best care will be obtained where the observation of patients is the most painstaking and accurate.

CALCIUM IN THE URTICARIAS

Among the various possibilities that have been held responsible for the genesis of urticarias or urticarial edemas, the indefinable factor described as altered permeability of the capillaries must be included. It is conceivable that such an alteration in the blood vessel walls may be brought about through the influence of chemical changes in the medium that normally bathes them as well as by the sudden appearance of foreign chemical substances, for example, toxins of bacterial origin, anaphylactic products, or extraneous poisons. Biologists have demonstrated on the simpler physiologic "models" of the lower forms of life that the permeability of their membranes is influenced by the relative concentration of potassium and calcium, among other agencies. Increases in the alkali elements bring about greater penetrability; decreased permeability may result from a lack of calcium. Hamburger,[1] for example, has shown that artificial edema may be produced by perfusing tissues with solutions deficient in calcium. It has further been argued that the important point is not the concentration of either the potassium or the calcium ion but the relation between the two. The hydrogen ion concentration has also been made responsible for changes in the exchange of fluids between the capillaries and the tissues.

This introduction will suffice to indicate why dermatologists have had their interest directed to the calcium content of the blood. It seemed reasonable to assume that at least some urticarias might find their explanation in a decrease in circulating calcium; and then, as often happens in the practice of medicine, calcium therapy was undertaken as a clinical measure before the assumption of a deficit was converted into a verity. The practice was promoted by Wright,[2] who was the first to use and advocate the internal administration of calcium salts in urticaria. He based this therapy on the fact that, in all conditions of diminished blood coagulability, there is a tendency to serous hemorrhage and urticaria. Later, he suggested that urticaria is due to a diminution in the calcium content of the blood serum. The known involvement of calcium in the phenomena of blood coagulation gave a further semblance of scientific worth to the proposed therapy.

The facts with respect to the blood in urticarias can readily be ascertained by direct experiment. Since 1924 a few investigators have applied the technic of microchemical analysis to suitable cases. The latest and most extensive studies of Greenbaum[3] at the Graduate School of Medicine of the University of Pennsylvania include estimations of calcium in the blood serum of sixty-three patients representing all forms of urticaria. In all but one, the results showed a normal or increased calcium. In slightly less than half the cases, coagulability of the blood was tested and a decrease was not found in any instance; rather, the tendency was toward an increase. Several cases ordinarily grouped as allergic showed an increased or normal coagulability. As Greenbaum consequently concludes, the administration of calcium salts to the majority of patients with urticaria lacks scientific basis. The practical experience of dermatologists likewise seems to give little warrant for the use of calcium salts.[4] Without even an empiric reason for continuance of the practice, it seems to be doomed. However, it should be noted that effective results in calcium therapy may depend on the use of far larger doses than have been conventional, or on the availability of the calcium actually circulating. The possible significance of such considerations has been stressed by Andrews[5] in relation to recent clinical attempts at calcium therapy in nephritis. He believes that they have ample experimental basis, but enormous doses will be needed, and a distinction must be drawn between transient calcium and calcium actually incorporated into the body cells.

ANALOGIES BETWEEN THE AQUEOUS HUMOR AND THE CEREBROSPINAL FLUID

In his classic essay "An Introduction to the Study of Experimental Medicine," a volume recently made available in English translation, Claude Bernard[6] proposed to prove that the science of vital phenomena must have the same foundations as the science of the phenomena of inorganic substances, and that there is no difference in this respect between the principles of biologic science and those of physicochemical science. Indeed, the goal which the experimental method sets itself is everywhere the same; it consists in connecting natural phenomena with their necessary conditions or with their immediate causes. In biology, since these conditions are known, physiologists can guide the manifestation of vital phenomena as physicists guide the natural phenomena, the laws of which they have discovered. The effort to test mechanistic, that is, physicochemical explanations of physiologic changes in the body is a tendency of the present day. One result has

1. Hamburger, R.: Ueber die Bedeutung der Kalium- und Calciumionen für das künstliche Oedem und für Gefässweite, Biochem. Ztschr. **129**: 153, 1922.
2. Wright, A. E.: Brit. J. Dermat. **8**: 82, 1896.
3. Greenbaum, S. S.: Blood Serum Calcium in the Urticarias, Arch. Dermat. & Syph. **16**: 553 (Nov.) 1927.
4. Discussion on Greenbaum (footnote 3).
5. Andrews, Edmund: Experimental Uremia, Arch. Int. Med. **40**: 548 (Oct.) 1927.
6. Bernard, Claude: An Introduction to the Study of Experimental Medicine, New York, Macmillan Company, 1927.

been to remove certain characteristic physiologic processes out of the category of the more vague manifestations commonly designated as secretion and class them with other clearly recognized instances of simple fluid exchanged.

When two fluids are separated in the body by a membrane, the exchange between them may be expected to follow the well known principles of diffusion and equilibrium long recognized in biology. Where the fluid in the capillaries represents one of the factors, the rate of filtration or dialysis will be dependent, as Fremont-Smith and Forbes [7] have expressed it, on a balance between the hydrostatic capillary pressure and the osmotic pressure exerted by the plasma proteins, since the proteins are the chief substances in the plasma to which the capillary wall is impermeable. When the composition of the plasma remains constant, the amount by which the capillary blood pressure exceeds the osmotic pressure of the plasma proteins becomes the effective filtration pressure. Thus, under these conditions, the rate of filtration will vary directly with the capillary pressure. When, however, the latter becomes less than the osmotic pressure of the plasma proteins, no filtration can take place; the direction of flow across the membrane will be reversed, and absorption will occur. Filtration and absorption thus represent the ordinary ebb and flow between the blood vessels and the tissue spaces.

There is, of course, nothing essentially novel in this statement. However, the forces thus described at play have been regarded by many persons as inadequate to explain some of the conspicuous instances of fluid exchange. Hence "secretory forces" have been called into being to account for the known facts. The genesis of the aqueous humor of the eye was thus attributed to secretion by the ciliary process; and the cerebrospinal fluid was alleged to be generated by the secretory action of the choroid plexus. In a recent issue of THE JOURNAL [8] the evidence was reviewed to show that the cerebrospinal fluid actually is in equilibrium with the blood. The variations in pressure of the fluid can be accounted for by the changes that occur in capillary pressure in the choroid plexus or in osmotic pressure of the plasma. The chemical composition of the fluid, as far as all the major constituents are concerned, is exactly what would be expected from a simple membrane equilibrium, and can be reproduced outside the body by simply dialyzing plasma through a suitable collodion membrane.

The evidence for the secretory theory in relation to the aqueous humor is largely anatomic. The view that has been most widely adopted until late is that this fluid of the eye is secreted by the cells of the ciliary epithelium, that it circulates through the eye, and that it finds an exit largely by way of the canal of Schlemm. Alternatively, it is held by some that this fluid is formed from the blood by a process of simple transudation through the capillary walls and circulates in a similar manner. According to Duke-Elder's investigations [9] at St. George's Hospital, London, from the biochemical point of view neither the normal nor the abnormal aqueous humor shows evidence of the existence of any special secretory mechanism in its elaboration but appears to be rather a dialysate of the capillary blood. This view is substantiated by studies [7] in the Department of Neuropathology at the Harvard Medical School. They show that although the intracranial and the intra-ocular pressures are not directly dependent on each other, changes of hydrostatic or of osmotic pressure induced in the blood produce a parallel change in pressure in the eye and in the cranium.

Fremont-Smith and Forbes have properly noted that the available information serves to emphasize the similarity in the mechanisms for the formation and for absorption of intra-ocular and intra-cranial fluids, and to indicate that these mechanisms are fundamental in the fluid exchange of the body. There are significant consequences of the limitations of the physical and chemical processes in the delicate balance between the hydrostatic and the osmotic pressure of the capillary and venous plasmas within the eye and the cranium. The rate of absorption of fluid in the eye or in the cranium accordingly must vary directly with the venous pressure of scleral or dural sinuses, while the rate of formation will vary with the capillary pressure in the ciliary process or the choroid plexus. Capillary pressures are primarily controlled by the venous pressures. This explains, as Fremont-Smith and Forbes point out, why both aqueous humor and cerebrospinal fluid pressures are so intimately related to the venous pressure and are much less affected by changes in arterial pressure. Whenever absorption does not keep pace with filtration, there will be an accumulation of fluid in the tissue spaces, recognized in the elastic skin and subcutaneous tissues by edema. In the cranium and the eye, however, which are rigidly enclosed, this results in an increase in pressure—hydrocephalus or glaucoma. These newer views represent opportunities for more effective attacks on the pathology of intracranial and intra-ocular pressure. The mechanism has been presented in simplified terms. It remains complicated by the various factors that may modify simple fluid exchange. They are, according to Fremont-Smith and Forbes, the difference in composition of arterial and of venous plasma, the effect of tissue metabolism on the composition of the tissue fluids, the relative areas of diffusing surface for the formation and absorption of fluid, and the permeabilities of the membranes themselves. The mere restatement of the problems involved in clearer terms represents a step in advance.

7. Fremont-Smith, Frank; and Forbes, H. S.: Intra-Ocular and Intracranial Pressure, Arch. Neurol. & Psychiat. **18**: 550 (Oct.) 1927.

8. The Cerebrospinal Fluid, editorial, J. A. M. A. **88**: 1322 (April 23) 1927.

9. Duke-Elder, S.: The Biochemistry of the Aqueous Humor, Biochem. J. **21**: 66, 1927.

Current Comment

ARTERIOSCLEROSIS AND DIABETES

With improvement in treatment, the danger of growing old seems to have overtaken the patient with diabetes. The average age at death of 339 diabetic patients in what Joslin[1] calls the Naunyn period was 44.8 years, and the average age at death of 607 patients in the Banting period, 54.2 years. The average duration of the disease, which in the Naunyn period was 4.7 years, increased to 5.4 years in the Allen period and has increased still more in the Banting period. Coincident with the increase in the length of life of diabetic patients, the cause of death has changed; coma has dropped to one third of its former incidence as a cause of death, and arteriosclerosis has risen threefold in importance. Since arteriosclerosis in diabetes seems to have a preference for the arteries of the heart and legs, Joslin warns against the sudden reduction of the blood sugar level in the older patients. Extreme caution in reducing the blood sugar should be taken especially with diabetic patients having angina pectoris. High blood sugar may be a compensatory phenomenon designed to nourish a diseased heart. Formerly 61 per cent of the fatalities in diabetes were due to coma, but since the introduction of insulin, coma has decreased to 20 per cent. Coincidently, arteriosclerosis has risen from 15 per cent in the Naunyn period to 47 per cent in the present Banting period. Joslin suggests that diabetes may even disappear from death certificates, because it will become a secondary cause of death; even now, the International List of Causes of Death does not record the death of a diabetic patient as having occurred from diabetes if he dies of typhoid, tuberculosis or many other diseases. That, it is said, is why private records on diabetes will grow steadily in value.

WAR NEPHRITIS

The continued effects of gas injuries incurred in the World War, particularly changes in the lungs, are apparently less serious than originally was suspected.[2] According to Hume and Nattrass,[3] however, information on the late effects of acute nephritis which came on during the war has been meager. Their experience, gained in the Ministry of Pensions Clinic, at Newcastle, causes them to believe that "too light a view" has hitherto been taken of these late effects. Of 418 men with alleged renal disease who reported at their clinic during the years 1922 to 1925, the investigators selected 281 in whom primary acute nephritis apparently occurred during the war. In a typical case, the patient enlisted in October, 1915, and went to France in November, 1916. In February, 1917, he suffered sudden listlessness, pains in the back and legs, and occipital and frontal headache. Anuria, persisting for twenty-four hours or more, was followed by painful passage of small amounts of blood-stained urine. Swelling of the face and ankles lasted for two weeks and the patient was hospitalized for fourteen months. When, for one week, he attempted to perform light duty, symptoms returned and he was discharged from the army in 1918. The physicians examined every three months patients who presented histories of this sort; 45.5 per cent did not show definite evidence of renal disease; 9.5 per cent had developed advanced chronic nephritis, and seven of these men, or 2.5 per cent of the total, have died; 45 per cent were sufferers from gradual progressive nephritis and in future years may be expected to develop more severe forms of the disease. In 1917, Thomson and Keith[4] studied, at the Boulogne base, a group of these patients from the British Expeditionary Force. They grouped the cases as resolving, nonresolving and early fatal. The figures just presented probably represent the results, after nearly ten years, in the resolving and nonresolving groups. The cost of the war will be determinable only after many generations have passed.

1. Joslin, E. P.: Arteriosclerosis and Diabetes, Ann. Clin. Med. **5**: 1061 (June) 1927.
2. The Medical Department of the United States Army in the World War, **14**, Medical Aspects of Gas Warfare, Government Printing Office, 1926, p. 280; quotations given in Book Notices, J. A. M. A. **88**: 1590 (May 14) 1927.
3. Hume, W. E., and Nattrass, F. J.: The Late Effects of War Nephritis, Quart. J. Med. **21**: 1 (Oct.) 1927.
4. Keith, N. M.: The Problem of Acute Nephritis in Soldiers on Active Duty, Mil. Surgeon **60**: 529 (May) 1927.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Bequest for Suppression of Quackery.—By the will of the late Dr. Morris Herzstein, the California Medical Association was bequeathed $20,000 to be used in the "suppression of quackery in the practice of medicine." The California Medical Association acknowledges with gratitude the gift and the trust reposed in it.

Perpetual Fund for Study of Infantile Paralysis.—It has been announced that an anonymous friend of the University of California will give $5,000 a year during the remainder of his life for the prevention and cure of infantile paralysis or other diseases of children in California, and will make provision in his will for a fund of $100,000 to be devoted to this work. The money is to be used by the Hooper Foundation, the present director of which is Karl F. Meyer, Ph.D. While the primary purpose of the fund is for the study of infantile paralysis, it may be diverted to other purposes in case of a serious epidemic threatening the lives of the children of the state.

Hollywood Masseuse Treats Acute Diseases.—Mrs. Charlotte Anderson, masseuse, 6042 Carlton Way, Hollywood, charged with violating the medical practice act, pleaded guilty, recently, and was sentenced to sixty days in jail, the sentence being suspended for two years. Mrs. Anderson, an investigator stated, has operated a massage parlor in Hollywood for years. The back of her business card read: "We treat all chronic and acute diseases, such as kidney and liver troubles, neuritis, rheumatism, bronchial and stomach diseases, nervousness and run-down conditions. Special treatment for reducing. Contagious and offensive diseases not taken. Formerly with Dr. Carl Schultz of the Neuropathic Institute and Sanatorium of California."

Society News.—Drs. Harry M. Kanner and Dudley A. Smith of the staff of the University of California Medical School addressed the Placer County Medical Society, Auburn, November 12, on "The Demonstration of Forceps with a Manikin" and "Importance of Technic in Rectum Examinations," respectively.—Dr. Fred R. Fairchild, Woodland,

addressed the Kern County Medical Society, November 17, on "The Most Important Single Factor in Surgery."—— Dr. Edwin W. Bathurst, Etna, was honored by the Siskiyou County Medical Society recently in celebration of his fiftieth year of practice in Siskiyou County.——Tulare County Medical Society has renewed its group subscriptions to *Hygeia*, which it places in most of the libraries in Tulare County.

ILLINOIS

Dr. Grinstead Honored.—The Southern Illinois Medical Association gave a testimonial dinner at Cairo, December 14, to celebrate the completion of fifty years in the practice of medicine by Dr. William F. Grinstead. The toastmaster, Dr. Andy Hall, Mount Vernon, presented to the guest of honor a silver loving cup on behalf of the association and a copy of the guest list bound in leather. In addition, telegrams and letters of congratulation from distant places were read. The speakers included Drs. Jonathan L. Wiggins, East St. Louis; Roland Hill, St. Louis; G. Henry Mundt, Chicago, president of the Illinois State Medical Society; Congressman Ralph Bailey, Sikeston, Mo., and Judge Albert Watson, Mount Vernon. Practically every member of the Alexander County Medical Society was present, as well as friends from other organizations.

Chicago

Drs. Geiger and Falk Released from City Health Department.—Dr. John C. Geiger, assistant health commissioner of Chicago and executive secretary of the health department, was given a year's leave of absence, December 24, by Health Commissioner Arnold H. Kegel. Dr. Geiger is said to have announced that his withdrawal from the department will be permanent. Isidore S. Falk, Ph.D., for some time director of surveys in the city health department, turned in his resignation a few days ago at Dr. Kegel's request. Dr. Geiger is a graduate of Tulane University of Louisiana School of Medicine, New Orleans, and formerly was epidemiologist for the U. S. Public Health Service. He is a professorial lecturer in public health administration at the University of Chicago. Dr. Falk is associate professor of bacteriology at the University of Chicago.

Professor Parr Heads Chemical Society.—Samuel Wilson Parr, D.Sc., professor emeritus of applied chemistry, University of Illinois, has been elected president of the American Chemical Society for 1928. Professor Parr has been on the teaching staff of the University of Illinois since 1891, and only recently became an emeritus professor by virtue of the system of retirement in effect at the university. He is particularly noted for his work on coal, the calorimeter bearing his name being used generally for the determination of combustion heat units; his studies of coking reactions led to a method of producing coke more rapidly at lower temperatures and with a greater yield of gas and tar from midcontinent coals, such as are found in Illinois. Professor Parr still continues his productive studies and close contact with the department of chemistry at the university.

Society News.—Dr. William J. Mayo, Rochester, Minn., addressed the one hundred and fiftieth meeting of the Medical Research Club of the University of Illinois College of Medicine, December 14, on "Advancement of Learning in Medicine"; W. T. Bovie, Ph.D., professor of biophysics, Northwestern University Medical School, addressed the afternoon meeting of the club on "The Stuff We Are Made of, or the Nature of Protoplasm."——Dr. John O. Polak, Brooklyn, will address the Chicago Medical Society, January 4, on "Toxemias of Pregnancy"; the discussants will be Drs. Joseph B. De Lee, David S. Hillis, Noble Sproat Heaney and Joseph L. Baer. Franz Groedel, Bad Nauheim, Germany, will address this meeting on "What the Roentgenogram Tells Us in Syphilitic Diseases of Visceral Organs." The Chicago Gynecological Society will give a dinner at the Stevens Hotel preceeding the meeting in honor of Dr. Polak. Members of the society are invited to attend.——Dr. Irving W. Potter, Buffalo, will give the annual Alpha Omega Alpha Lecture, January 4, at the University of Illinois, 1 p. m., on "The Technic of an Elective Version."

LOUISIANA

Society News.—Dr. Samuel J. Crumbine of the American Child Health Association addressed a conference of health officers and health unit directors of Louisiana, December 16, Alexandria; his address was on causes of maternal and infant deaths; other subjects discussed at the conference were screening against mosquitoes and privy building.—— Dr. Robert F. DeRouen, Clarence, was elected president of the Eighth District Medical Society, November 28, at a meeting in Natchitoches.

Directors of New Parish Health Units.—The Louisiana State Board of Health announces the appointment of the following physicians as directors of new parish health units with headquarters at the city indicated:

Assumption Parish, Napoleonville, Dr. Thomas G. Scott, High Point, N. C.
Caldwell Parish, Columbia, Dr. William R. King, Knoxville, Tenn.
Concordia Parish, Vidalia, Dr. Ralph H. Allen, Omaha, Ga.
Lafayette Parish, Lafayette, Dr. Dallas C. Johnson, Woodville, Texas.
Lafourche Parish, Thibodaux, Dr. Hubert S. Smith, Lafourche, La.
La Salle Parish, Jena, Dr. John M. Kittrell, Pascagoula, Miss.
Madison Parish, Tallulah, Dr. Lawrence R. Craig, Bradenton, Fla.
Morehouse Parish, Bastrop, Dr. John W. Williams, Washington, N. C.
Richland Parish, Rayville, Dr. Wilson W. Knowlton, Rochester, N. Y.
St. Martin Parish, St. Martinville, Dr. Robert J. Gillespie, Pascagoula, Miss.
Tensas Parish, St. Joseph, Dr. Nelse P. Liles, Jr., Lilesville, N. C.
St. Mary Parish, Franklin, Dr. Francis E. Evans, Waymart, Pa.
Claiborne Parish, Homer, Dr. Robert C. Farrier, Homer, La.
Caddo Parish, Shreveport, Dr. William J. Sandidge, Shreveport, La.
De Sota Parish, Mansfield, Dr. Roger A. Tharp, Mansfield, La.
Natchitoches Parish, Natchitoches, Dr. William W. Knipmeyer, Natchitoches, La.
Ouachita Parish, Monroe, Dr. Edward C. Edwards, Shreveport, La.
Rapides Parish, Alexandria, Dr. George McC. Boteler, Poplar Bluff, Mo.
Tangipahoa Parish, Amite, Dr. Bert Landon Stinson, Great Bend, Kan.
Washington Parish, Franklinton, Dr. John Schreiber, Monroe, La.
Webster Parish, Minden, Dr. Edwin B. Godfrey, Minden, La.

MARYLAND

Hospital News.—An addition costing $500,000 is to be erected in the spring to the Union Memorial Hospital, Baltimore, from funds donated by Mr. Frederick Bauernschmidt; 128 additional beds will thus be provided, and they will be for persons of moderate means.——A campaign was opened, November 29, to raise $150,000 for a building fund for the Provident Hospital and Free Dispensary for Negroes, Baltimore; John D. Rockefeller, Jr., contributed $25,000 to this fund and an additional $30,000 toward the maintenance of the hospital; the total subscription at the time of this report amounted to $92,000.

Health Centers for Colored People.—Community health centers for colored people are gradually being established throughout the state of Maryland, the latest addition being at Turner's Station in Baltimore County. One of the best equipped of these centers is at Frederick, where a room in the basement of a colored church has been set aside for such health work as weekly conferences, the exhibition of posters and lectures. No medical treatments are given, the patients being referred to their family physicians. Colored public health nurses are now employed among the colored people in Kent, Calvert, Charles, St. Marys and Frederick counties. The death rates for colored children are nearly twice as high as those for white children. From 1924 through 1926, one out of every seven colored babies born in the state died before it was a year old. In the white population one out of every fourteen babies died before it was a year old.

Society News.—Dr. James P. Leake, U. S. Public Health Service, lectured at the School of Hygiene and Public Health of Johns Hopkins University, December 20, on "Epidemiology of Smallpox."——Dr. Max A. Novey addressed the Baltimore County Medical Association, December 21, on "Pregnancy and Syphilis."——At an informal smoker celebrating the one hundred and twentieth anniversary of the founding of the University of Maryland, recently, Senator Walter A. Mitchell made a plea for young physicians to settle in rural districts. It is stated that in southern Maryland the average age of country physicians is 55. Senator Mitchell considered that although good roads had placed city hospitals within reach of the rural areas, there will always be a need for the country physician.——At the December 16 meeting of the Baltimore City Medical Society, Dr. Charles Loring Joslin exhibited a moving picture of the symptoms and treatment of cerebral hemorrhage in the new-born; Dr. Leon Freedom spoke on "Cerebral Infantile Palsies," and Dr. Valcoulon L. Ellicott on "A Recent Case of Illegal Medical Practice."

MICHIGAN

Telephone Book Lists Society Members Separately.—The *Bulletin* of the Wayne County Medical Society notes that the entire membership of the Wayne County Medical Society is listed separately in the classified section of the December issue of the telephone directory. This arrangement was made possible through the efforts of the officers of the state medical society and the county medical society, and the expense entailed is being handled by the state society out of its portion of the dues of members of the Wayne County Medical Society.

NEBRASKA

Society News.—Dr. Morris Fishbein, Chicago, editor of THE JOURNAL, addressed the Omaha-Douglas County Medical Society, December 19, on "Socialization and Paternalism in Medical Practice," and in the afternoon addressed the faculty and students at Creighton University Medical College and of the University of Nebraska School of Medicine; in the evening, Dr. Fishbein attended a banquet given in his honor by the Phi Delta Epsilon Medical Fraternity, and at noon addressed the Omaha Chamber of Commerce on "Fads and Quackery." On Tuesday, December 20, he addressed the Rotary Club of Lincoln on "The Pursuit of Longevity," and in the evening spoke at the banquet of the Lancaster County Medical Society.

NEW JERSEY

Personal.—Dr. Henry H. Kessler, Newark, has been appointed to the permanent position of medical director of the Rehabilitation Clinic and Workmen's Compensation Bureau at Newark, succeeding Dr. Edgar Holden, Jr., resigned. Dr. Kessler has been associated with the clinic since its inception eight years ago.

Society News.—At the annual election of the Atlantic County Medical Society, Atlantic City, November 11, Dr. William C. Wescott was elected president, and Dr. Joseph H. Marcus, secretary.——The Essex County Medical Society at its one hundred and twelfth annual meeting voted 71 to 6 to petition the state society neither to present or to encourage a bill for the annual registration of physicians. It is expected that such a bill will be presented to the next legislature.——Dr. Foster Kennedy, New York, addressed the Hudson Medical Society, Jersey City, November 1, on "Neuropsychology."

NEW MEXICO

Traveling Milk Laboratory.—The American Child Health Association loaned to the state a traveling milk laboratory, August 23, which it was necessary to return in the middle of October. This is the first time that a systematic study of the large milk supplies of New Mexico has been made. The state health officer believes that the survey made demonstrates the feasibility of establishing a traveling laboratory of this kind, as many towns cannot afford to maintain their own facilities. In his report, Mr. Estes, who was in charge of the work, said in part that there is an outstanding absence of pasteurized milk in the state of New Mexico. This is due in part to the large number of small milk dealers. It was pointed out that New Mexico has only three full-time milk inspectors, and that there is a strong sentiment in the state for the continuance of milk tests by the traveling laboratory. The survey revealed a wide range of bacterial counts, as was expected. The survey included, among other items, the inspection of sixty-four dairies, the analysis of 464 samples of milk, and the holding of thirty-seven public meetings.

NEW YORK

Hospital News.—The annual United Hospital Fund drive is again under way to provide $1,000,000 to assist a group of fifty-six nonmunicipal hospitals in providing free service to needy patients.——The Jones Memorial Hospital at Wellsville has undertaken the construction of a maternity pavilion, for which $25,000 was given to the hospital by Mrs. B. C. Fuller.

Health at Albany.—Telegraphic reports to the U. S. Department of Commerce from sixty-seven cities with a total population of about 29,000,000 for the week ending Dec. 17, 1927, indicate that the highest mortality rate (24.8) was for Albany, and that the mortality rate for the group of cities as a whole was 12.7. The mortality rate for Albany for the corresponding week last year was 16.3 and for the group of cities, 13.1.

Personal.—Dr. Louis I. Harris completed his twentieth year in the service of the city department of health, November 30. ——Dr. Abraham Jablons has been elected president of the Eastern Medical Society for the ensuing year.——Dr. Earl R. Templeton has resigned as field secretary of the American Heart Association.——Dr. Fraser D. Mooney has been appointed acting superintendent of the Buffalo General Hospital since the death of Dr. Renwick R. Ross, whose assistant he was for two years.

Smallpox at Show—Patrons Vaccinated.—A school girl of Chadwicks was advised by the family physician to remain at home pending a final diagnosis of a rash. Instead she went to the movie house to sell popcorn as usual, and health officers who followed her there diagnosed the case smallpox. The picture was stopped and an announcement made that the patrons would have to be vaccinated in three days or be quarantined for three weeks. The names of all were taken. More than 200 persons who attended the picture were vaccinated.

Assistant Physicians Appointed.—The following appointments of assistant physicians in the state hospitals indicated have been announced:

Dr. Lorrimer B. Armstrong, Central Islip State Hospital.
Dr. Eugene C. Ciccarelli, Manhattan State Hospital.
Dr. Theodore L. Cohn, Central Islip State Hospital.
Dr. Herman L. Rachlin, Kings Park State Hospital.
Dr. Margaret Layla Ross, Kings Park State Hospital.
Dr. Maurice A. Scher, Central Islip State Hospital.
Dr. Walter E. Scribner, Binghamton State Hospital.
Dr. John S. Staneslow, Rochester State Hospital.
Dr. Walter R. Van Tassel, Binghamton State Hospital.
Dr. Samuel M. Weingrow, Craig Colony.

Director of Laboratories Appointed.—Dr. Frederick H. Dieterich, recently director of the laboratories at the Good Samaritan Hospital, Cincinnati, has been appointed director of the bureau of laboratories, department of public health of Yonkers. Dr. Dieterich formerly was pathologist for the department of welfare in New York and taught clinical pathology at Columbia University College of Physicians and Surgeons. He was also professor of pathology at the University of South Carolina School of Medicine and a teacher in Creighton University. His work at Yonkers will consist of supervising the three hospital laboratories of the state laboratory in the city hall.

Society News.—At the annual meeting of the New York Otological Society, Dr. Wells P. Eagleton, Newark, N. J., was elected president for 1928; Dr. William H. Haskins, New York, vice president, and Dr. Truman L. Saunders, secretary.——Dr. William Rosenson addressed the Medical Society of the County of New York, December 23, on "Occupational Disorders of the Public School Child."——Dr. James T. Gwathmey addressed the Yorkville Medical Society, December 19, on "Preliminary Education in Obstetric Analgesia and Surgical Anesthesia," with lantern slide demonstration.——The New York State Committee of the American Society for the Control of Cancer met in Rochester, December 13, under the chairmanship of Dr. John M. Swan, Rochester. The committee is engaged in distributing material to instruct the public in cancer control, and since the beginning of the fiscal year, seventy public meetings have been held, the audiences totaling 8,941 persons; Dr. Howard C. Taylor, New York, president of the American Society for the Control of Cancer, attended this committee meeting.——Dr. George W. Crile, Cleveland, addressed the Geneva Academy of Medicine, Geneva, November 9, on "Clinical Aspect of the Goiter Problem."——The Jefferson County Medical Society was addressed, November 10, by Dr. Charles D. Reid, Jr., Syracuse, on "Common Orthopedic Problems."

NORTH CAROLINA

Society News.—At the October 28 meeting of the Cumberland County Medical Society Dr. Wesley E. Taylor, Greensboro, read a paper on "The School Child and Its Nervous System," and Drs. A. D. and Frank Rines on "Work of the Great Physician." Col. David Baker, recently assigned to the medical service at Fort Bragg, was welcomed at this meeting.——Dr. William Allen Pusey, Chicago, addressed the Mecklenburg County Medical Society, Charlotte, recently, on "Eczema" while on a tour of the Carolinas with local health authorities to determine the need for medical practitioners and hospitals.——At the December 12 meeting of the Charlotte Clinico-Pathological Society, a symposium on the heart was conducted, and physicians from the adjoining counties of the Carolinas attended.——Dr. Bartlett J. Witherspoon, Charlotte, was elected president of the Seaboard Airline Railway Surgeons' Association at the annual meeting in Miami, Fla.

PENNSYLVANIA

Personal.—Dr. William M. Guilford celebrated his ninety-fifth birthday, November 26. Dr. Guilford is the oldest living graduate of the University of Pennsylvania School of Medicine; he is a past president of the Lebanon County Medical Society, and for many years he was on the staff of the Good Samaritan Hospital, Lebanon.——Dr. Samuel T. Nicholson, Jr., physician in chief of the Hill School, Pottstown, addressed the Philadelphia Pediatric Society, December 13, on "The Function of a Boarding School Medical Department."——Dr. Simon L. Ruskin, New York, addressed the Northampton County Medical Society, December 16, Bethlehem, on "Practical Anatomic Consideration of Nasal Sinus Infections."

Philadelphia

Grant for Cancer Research.—The Duponts of Wilmington, Del., have made a grant of $50,000 to facilitate cancer research, making the University of Pennsylvania Graduate School of Medicine, in whose hospitals and laboratories the research will be done, the depository of the fund.

Society News.—Dr. Aaron Brown, New York, addressed the Northern Medical Association of Philadelphia, December 19, on "Diagnosis of Hay-Fever and Asthma."——The new building of the Philadelphia College of Pharmacy and Science, Forty-Third Street and Kingsessing Avenue, will be ready for occupancy the first week in January; plans for a formal opening are being made by the president of the college, Dr. Wilmer Krusen.——Among others, Dr. Martin J. Costello addressed the Philadelphia Urological Society, December 19, on "Duplication of the Ureter," and Dr. William Hersey Thomas on "Sarcoma of the Kidney."——Dr. Morris A. Freed addressed the West End Medical Society, December 21, on "Infantile Paralysis."

TEXAS

Hospital News.—At a recent meeting of the hospital board of the Texas and Pacific Railway Hospital Association, a contract was awarded for a new hospital to replace the one now being used which will cost about $200,000 and have a capacity of about 105 beds. It is planned to have the building ready for occupancy by June 1, 1928.

Annual Water Works Meeting.—The tenth annual water works school will be held in Houston, January 23-27, under the joint auspices of the Texas State Department of Health, the city of Houston and the water works association. Among others, Willem Rudolfs, chemist, agricultural experiment station, New Brunswick, N. J., will read a paper, and Karl Imhoff, Essen, Germany, is sending a paper to be read. Some of the problems to be discussed will be improved methods for using fuel; safe water delivery from underground sources; the interpretation of water analysis; microscopic life in water; odor control, and stream pollution. There will be inspection trips the last day.

Society News.—According to the *Texas State Journal of Medicine*, the Women's Auxiliary of the Bexar County Medical Society has available $300 from a "student fund" to be used for the medical education of some physician's son or daughter who may be in need of help.——Dr. Robert B. Giles, Dallas, addressed the Smith County Medical Society, Tyler, December 13, on treatment of high blood pressure; Dr. Charles E. Hamner, Shreveport, La., on interpretation of total white and differential blood counts, and Dr. John S. Turner, Dallas, on heredity and environment. Following a luncheon, the annual election was held; Dr. Albert Woldert, Tyler, was reelected president, and Dr. Charles E. Willingham, Tyler, secretary-treasurer, reelected.

Better Health Train.—The Missouri Pacific Railway Company, in cooperation with the Texas State Department of Health, will conduct a better health exhibition train through about 100 towns in Texas, from January 16 to Feb. 10, 1928. There will be two exhibit cars containing models, charts, posters and cars for the personnel. Before the train arrives in a community, studies will be made of the local problems and arrangements made for conferences with the lecturers on the train to explain how improvements may be made at a minimum cost. The train will stop only a few hours at each town. The lectures will be short, and several moving picture reels will be exhibited. The agencies cooperating include health officers, school boards, chambers of commerce, civic organizations, dairymen and others.

VIRGINIA

Hospital News.—St. Philip Hospital, Richmond, which is operated by the Medical College of Virginia for colored people and for teaching purposes, has received $130,000 from the Martha Allen Wise estate for the care and treatment of patients.

Personal.—The state preventorium being erected at the University of Virginia by voluntary subscriptions by the teachers of the state is to be named in honor of Dr. Ennion G. Williams, Richmond, who has been the state health commissioner since 1908. The new institution is to provide accommodations for teachers.

Society News.—The Clinch Valley Medical Society, comprising Wise, Tazewell, Lee, Russell, Dickenson, Buchanan and Scott counties, met at Norton, November 4. The sessions were held together, but it was decided that each county should have a separate charter from the state medical society, and that members from these counties should separately consider any questions of particular interest to their counties. The scientific sessions included, among others, papers by William W. Cort, Ph.D., Johns Hopkins School of Hygiene and Public Health, Baltimore; Dr. Noah H. Short, Norton, and Dr. Julius D. Willis of Roanoke. Dr. Claude B. Bowyer, Stonega, was elected president.——The Post-Graduate Medical Society of Southern Virginia met at Surry, November 8. The first part of the scientific program was a "journal hour," followed by a symposium on pneumonia; thirty-three physicians attended the meeting.——The Piedmont Medical Society met at Orange, December 2, with an attendance of thirty-seven physicians; Dr. Hugh T. Nelson, Jr., Charlottesville, was elected president. The next meeting will be held at Fredericksburg the latter part of May in conjunction with the Northern Neck Medical Society.

GENERAL

Infantile Paralysis Reported.—Forty-two states reported 172 cases of infantile paralysis during the week ending December 3, while for the corresponding week in 1926 these states reported thirty-four cases, and in 1925 they reported thirty-seven cases. During the week ending November 19, forty-two states reported 297 cases, and the following week, 195.

Progress in Tuberculosis Eradication.—There was progress in the campaign to eradicate tuberculosis in domestic live stock during the last year. The chief of the bureau of animal industry, John R. Mohler, in his report to the secretary of agriculture, states there was a gain of 149 counties which completed the testing of cattle and reduced the extent of infection to within 0.5 per cent, the total number of counties on June 30 being 347. The federal government appropriated $4,653,000 for this work, which was supplemented by state appropriations of $13,000,000, making possible the testing of nearly 10,000,000 cattle.

Society News.—The National Committee for Mental Hygiene has acquired the library of the late Dr. Thomas W. Salmon, which will be kept intact and separate in the offices of the committee at 370 Seventh Avenue, New York.——Drs. William F. Snow, New York, William H. Wilmer, Baltimore, and Ellice M. Alger, New York, have been elected members of the board of directors of the National Committee for the Prevention of Blindness.——The American Therapeutic Society will hold its annual meeting at Minneapolis, June 9-11. The American Gastro-Enterological Association will hold its next annual meeting at Washington, D. C., April 30-May 1. The secretary of both of these organizations is Dr. William J. Mallory, 1770 Connecticut Avenue, Washington, D. C.

Thyroid Races in Doves.—Oscar Riddle, Ph.D., of the research staff of the Carnegie Institution of Washington, opened the annual series of lectures given under the auspices of the institution, November 16, with an address on "Internal Secretion in Evolution and Reproduction." He reported that he was able, in experiments conducted in the comparatively short period of six years, to create several races of doves which differ from their ancestors in the possession of constantly large or constantly small thyroid glands. This is said to be the first time that a race characterized by the size of a hormone-producing organ has been obtained in biologic experiment. Dr. Riddle said that in many respects human races are the biologic equivalents of the dove races with which these experiments are made, and that the possibilities of the establishment of races or strains of one or another thyroid size are theoretically similar in the two forms. The advantages and disadvantages to races of hereditarily large or small thyroids are susceptible of examination in these new races of pigeons, and such studies are being made.

First Casualty in War Was a Medical Officer.—In response to frequent inquiries as to what troops suffered the first casualties in the World War, Secretary of War Davis ordered a search of the records. He said, according to the New York *Times*, that war department records show that Lieut. Louis J. Genella, medical corps, suffered the first casualty among the U. S. Army personnel, July 14, 1917, when he was wounded by a shell while serving with the British forces. Lieutenant Genella is now living at New Orleans. The first American soldiers to be killed by military agents of the German government during the war were Lieut. William T. Fitzsimons, medical reserve corps, and Private First Class Oscar C. Tugo, Rudolph Rubino, Jr., and Leslie G. Woods of the medical department. They were killed by bombs dropped on U. S.

Army Base Hospital number 5 at Dannes-Camiers, France, by enemy airplanes. The new army general hospital at Denver, Colo., was named in honor of Lieutenant Fitzsimons and is known as the Fitzsimons General Hospital. The post gymnasium at Carlisle Barracks, Pa., is named in honor of Private Tugo and is known as Tugo Hall; the city of Boston has also named a square in his honor.

More Veterinarians Needed.—In his report to the U. S. Department of Agriculture, the chief of the bureau of animal industry writes on the situation in veterinary education and the future supply of veterinarians. During the year, one of the thirteen veterinary schools in this country and Canada closed. The number of freshmen in approved schools last year was 193, as compared with 165 for the previous year, and the total enrolment was 606, an increase of twenty-four over the previous year. The number of veterinary graduates was 115, or seventeen less than the previous year. A special study was made of the veterinary situation owing to the constant need of the bureau for veterinarians. The results showed, the report states, a marked shortage in the bureau's service of veterinarians under 30 years of age, which situation foreshadows within the next few years a rather large number of separations through retirement and other causes. Normally, the bureau needs annually about 100 new veterinary appointees which, it will be noted, is only slightly less than the total number of graduates this year of all veterinary colleges in the United States. It is clear, therefore, that in view of the additional requirements of state, county and city governments and the opportunities in private practice the veterinary field holds opportunities for well trained men.

Report on Health to Congress.—During the fiscal year 1927, 173 cases of tularemia were recognized in the United States, while previously 196 cases had been reported. A report submitted to Congress by Surg. Gen. Hugh S. Cumming of the U. S. Public Health Service showed that tularemia has been recognized now in thirty-six states, the District of Columbia and Japan. Typhus fever, which has occurred in New York City for years under the designation "Brill's disease," is being reported from many states. A total of 160 cases and five deaths were reported from eleven states during the calendar year 1926, and reports have been received of its occurrence in five other states. Its wide distribution and the lack of evidence of its spread through lice, as in old world typhus, makes this disease an important public health problem requiring thorough investigation. During the year 1926, there were reported from nine western states 195 cases of Rocky Mountain spotted fever and fifty-six deaths. This disease has become recognized over a wider area as it becomes better understood. Cases have been reported now from California, Colorado, Idaho, Montana, North Dakota, South Dakota, Oregon, Washington and Wyoming. In connection with investigations of malta fever, reports have been received and serum diagnosis has been made of fifteen cases from ten different states. Smallpox during the calendar year 1926 in most parts of the country was of a mild type. There were 380 deaths, however, and a total of 30,450 cases reported from forty-one states. The Pacific Coast states reported two thirds of these deaths, although they reported only about one fifth of the total number of cases. Neither cholera nor yellow fever was reported in the United States during the last fiscal year. Two cases of bubonic plague among rats at Los Angeles occurred. The birth rate in the registration area decreased to 21.1 per thousand of population in 1926. This, it is stated, is a continuation of the trend which has been noted since the birth registration area was established in 1915, in which year the birth rate was 25.1 per thousand. Decreasing birth and death rates are not peculiar to the United States, as the same phenomenon has been noted in most civilized countries.

Health in Other Countries.—The development of public health organization is such now that it is practicable to keep advised of the prevalence of epidemic disease and the health of populations throughout the world. This is brought about, the surgeon general, U. S. Public Health Service, says, in a report to Congress, through the interchange of information with state and local health officers in this country, diplomatic and consular officers abroad, the Pan American Sanitary Bureau at Washington, the International Office of Public Hygiene of Paris, and the health section of the League of Nations at Geneva. The health of all the population of the world from which dependable reports are available was better during the fiscal year ending June 30, 1927, than for any previous year for which the surgeon general has records. The last year witnessed no disheartening spread of infectious diseases into areas where public health administration is well established. Epidemics occurred here and there and preventable diseases occurred in some countries to an appalling degree, but on the whole the first half of the fiscal year 1927 saw unusually low death rates in foreign countries from which reports were received. In Germany, for instance, the 1926 urban death rate reached the low level of 10.3 per thousand; this favorable rate did not prevail throughout the world, but in most of the countries having higher mortality rates the year was signalized by unusual freedom from epidemic disease. The most serious condition, the report continues, interfering with the attaining of lower mortality rates was the influenza epidemic which affected the greater part of Europe in 1925-1926. While the epidemic was generally mild, its wide distribution resulted in a gross mortality in Europe that was estimated by the health section of the League of Nations as not less than 100,000 deaths. Influenza was also epidemic in China and Japan, but apparently not in India or Africa. Bubonic plague occurred here and there in Asia, Africa and South America, but was less prevalent than in the preceding four or five years. India, as usual, remained the principal focus of infection. Cholera during the year did not greatly diminish in India and appeared with unusual prevalence in countries east as far as Korea and Manchuria. The most serious epidemic in any port was at Shanghai where more than 1,200 cases were reported in the international settlement from the latter part of July until the middle of September, 1926. Yellow fever was confined to one section of Africa. It was more prevalent on the Gold Coast during the first half of 1927 than for about six years. With the exception of one case at Bahai, Brazil, yellow fever was not reported in the western hemisphere during the year.

LATIN AMERICA

Personal.—Dr. Carlos Enrique Paz Soldán, Lima, Peru, was elected president of the Pan American Sanitary Conference at the recent meeting in Lima, Peru, and Dr. Baltzar Caravedo, Lima, Peru, secretary-general.

New Medical School in Haiti.—The National School of Medicine and Pharmacy, Port au Prince, Haiti, dedicated its new building, October 3, 1927, which date, the director general of the Public Health Service of Haiti, Comdr. K. C.

Melhorn, U. S. Navy, considers, marks an epoch in the history of medicine in that country. A law making an appropriation for the building was enacted in August, 1926; his excellency, President Borno, laid the cornerstone, November 8, and in less than a year the building was occupied. On the first floor are five classrooms, an assembly room, a dental department, a store room and an office for the dean. There are five laboratories on the second floor for the medical sciences. The Rockefeller Foundation made an appropriation of $30,000 for equipment and of an another $30,000 for fellowships for men who are to be trained for positions on the faculty of the medical school. These fellowships have been awarded and the physicians are to study in Paris, Strasbourg, Ann Arbor, Boston, New Haven, Chicago, then return to Haiti to become members of the faculty. The Haitian authorities have cooperated wholeheartedly in this accomplishment and the public has taken a great interest. Equipment is being installed in the building as fast as it arrives. The school will be operating in full force by Jan. 1, 1928. Haiti gives to its qualified young men a medical education absolutely free from all personal cost.

CORRECTION

Dr. Bailey's Address New York.—In the article by Drs. Harold Bailey and H. C. Williamson entitled "Trial Labor as a Procedure in Treatment of Patients with Contracted Pelves" (THE JOURNAL, December 17, p. 2085) Dr. Bailey's address is given as Springfield, Mo. Dr. Bailey writes that this is incorrect, as his address is New York City.

Government Services

Death Rate of the Army

The mean annual strength of the army for the current year was 132,377 exclusive of nurses. There were 522 deaths from all causes. The annual death rate per thousand, according to the annual report of the surgeon general, was 3.94 as compared with 3.77 for 1925. The death rate from diseases was 2.27, and from external causes, 1.67. The latter figure was lower than for any years since 1919, the decline being due, largely, to a decided decrease in the number of deaths from airplane accidents. The leading cause of death was suicide, there being forty-four; the second most common cause was drowning, there being thirty-six, and the third, tuberculosis with thirty-three deaths. When all forms of pneumonia were considered as one group they stood second as a cause of death. There were 2,385 enlisted men discharged on certificates of disability, and forty-four officers retired on account of physical disability. Of the enlisted men discharged, 686 were discharged in line of duty; 1,245, were discharged on causes considered not to be in line of duty, the disability existing prior to enlistment. For the past three years, dementia praecox has been the leading cause of discharge and tuberculosis second. Of the 132,377 officers and men in the army, 4,273 were wholly or partially incapacitated for duty each day in the year. Each man in the army lost an average of 9.68 days from diseases, and 2.10 days from external causes. Gonorrhea caused the greatest loss of time, 127,018 days. A total number of days lost by the military personnel exclusive of nurses was 1,559,763.

Health in Training Camps

The surgeon general's office has made a report on admission rates from disease and external causes among the various troops in training camps during the seventeen weeks from June 4 to September 24. The health of the troops for the period was excellent. The admission rate for disease and external causes was lower than in the training period of 1926 except for the National Guard, which was slightly higher. One case of typhoid was reported in a student in a citizens military training camp at Fort Logan who was taken ill on the train while en route to camp, and one case in a member of the Texas National Guard at Camp Palacios; this patient died. Only one case of smallpox was recorded during the period and that was in the National Guard. Eighty-nine cases of malaria among the regular army troops were reported, giving a rate of 2.78 per thousand, while thirty-four cases were reported among the National Guard, giving a rate of 12.18 per thousand. The venereal disease rate among the regular army troops during the training period was 45.04, and the number of cases reported, 1,443; the rate among the National Guardsmen was 17.91, and the number of cases reported, fifty; the rate among the Reserve Officers' Training Corps was 3.84, and the number of cases, three; the rate among the citizens military training camps, 6.46, and the number of cases, twenty-two. Practically all cases of venereal disease among the trainees were contracted before they arrived in camp. Seven cases of epidemic cerebrospinal meningitis occurred among the regular army troops but none among any of the other troops. The highest rate from disease and external causes was for the citizens military training camps, and the second highest for the Reserve Officers' Training Corps; this has been true for the last few years, as a result, no doubt, according to the surgeon general's office, of the youth and inexperience of these troops in camp life.

U. S. Public Health Service

Surg. Clarence H. Waring has been assigned to duty at the hygienic laboratory, Washington, D. C.——Surg. Robert Olesen was directed, November 12, to proceed to Evansville, Ind., and return to make a health survey.——Surg. Howard F. Smith has been relieved from duty at Dublin, Irish Free State, and assigned to duty at Bergen, Norway, and P. A. Surg. Francis A. Ashford has been relieved from duty at Bergen and assigned to duty at Dublin.——Asst. Surg. Adolph S. Rumreich has been relieved from duty at Rolla, Mo., and assigned to duty at the Hygienic Laboratory, Washington, D. C.——Surg. Walter L. Treadway was directed, November 26, to proceed from Dublin, Ireland, to Warsaw, Poland, and return to assist in making a study of the mental examination of aliens as conducted at Warsaw.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Dec. 3, 1927.

Libel Action by the British Medical Association

The formation of the New Health Society under the presidency of Sir Arbuthnot Lane, who is its moving spirit, has been described in previous letters. Among its members are a few physicians and physiologists who carry on an active propaganda by means of public lectures, articles in the lay press and a special organ of the society. At the inception of the society, Lane had some differences with the British Medical Association which culminated in his resignation. For some reason difficult to understand, the liberal press in this country always takes the side of the irregular practitioners or the antivaccinators against the medical profession. The following recently appeared in a London liberal newspaper, the *Star:*

DOING WITHOUT IT

Our American cousins have an expressive figure of speech about the man who "bites off more than he can chaw." It might be applied with justice to the British Medical Association. While it confined its oppressive activities to bone setters and other unregistered physicians who could be dubbed quacks without fear of legal reprisals, it was able to get away with it. Any criticism of its conduct could be contemptuously swept aside as the uninformed prejudice of the mere layman. When, however, it tried to discipline distinguished members of its own body, it did, in fact, bite off more than it could chaw. Sir William Arbuthnot Lane, the president of the New Health Society, is the case in point at the moment. The B. M. A. does not like the society, for its motto is "Prevention rather than cure." To preach "Health without doctors" is the unforgivable sin to the medical monopolists, who have in the past imposed a very rigid etiquette of secretiveness on their close profession. Sir William appears to have had the courage to defy these out-of-date conventions and, contemptuous of the B. M. A.'s power to strike him off its register, is reported to have struck himself off. The B. M. A. can do — just nothing.

The association regarded this article as seriously defamatory and promptly brought an action against the *Star*, which at once published a disclaimer, stating that the article had been construed as imputing improper motives and behavior to the British Medical Association, particularly that the association was oppressive on physicians, registered as well as unregistered, that its hostility to the educative methods of the New Health Society arose from a desire to prevent any improvement in the public health because this would involve loss of fees to physicians, and that the association was actuated solely by the desire to benefit the medical profession without any regard whatever to public health or public interest. The disclaimer ended:

We disclaim the intention of making any such imputations, and we are fully satisfied that such a conception of the work and outlook of the British Medical Association would be wrong in fact and unjust, and we regret any wrong impression which the publication of the article may have created.

The disclaimer was read in court and the discontinuance of the action announced.

Recent Work on Foot and Mouth Disease

At a meeting of the Association of Economic Biologists, Mr. F. C. Minett of the Institute of Animal Pathology read an important paper in which he said that foot and mouth disease was particularly infectious in the early stages, but as it progressed there was a more or less rapid decline in infectivity. Experimentally, the disease could be set up in cattle with ease by rubbing infective material into scarifications of the lips. In 1926, evidence was forthcoming that in a particular instance the disease was carried into Great Britain through the medium of fresh pig carcasses from the European continent. In consequence, experiments were undertaken to study the period of survival of the virus. In frozen and chilled beef and bacon, and in salted carcasses

the virus survived at least forty-two days, and in the bone marrow of frozen beef carcasses for at least seventy-six days. It had been discovered that the virus was highly resistant to destruction by phenol (carbolic acid), compound solution of cresol and certain coal tar disinfectants. Experiments pointed to formaldehyde as being a reliable agent for general disinfection, as well as for special purposes, such as disinfecting the outsides of contaminated animal hides.

The General Medical Council and Medical Exclusion in the Dominions

At the opening of the one hundred and twenty-sixth session of the General Medical Council, the president, Sir Donald MacAlister, announced that the executive committee had received communications through the privy council from Quebec, Ontario and New Zealand which indicated a disposition in those parts of the empire to withdraw, from physicians registered in the medical register, the privileges of practicing within their respective territories which had hitherto been accorded them in virtue of reciprocal agreements made by order in council. Ground for the withdrawal seemed to be a desire to protect certain professional interests. If no modification of the views held by the provincial authorities on the subject could be brought about, the privy council would have to consider whether the privileges granted by this country to physicians from those British possessions now registrable on the colonial list of the register could justly be continued. Referring to India, Sir Donald said it was learned that definite steps had been taken to bring before the central legislature the establishment, by the agency of an all-Indian council, some form of control of Indian standards of professional qualifications.

PARIS

(From Our Regular Correspondent)

Nov. 30, 1927.

Lime Salts in the Treatment of Tuberculosis

Dr. Delore of Lyons has lodged a vigorous protest against the belief that lime salts are of value in the treatment of tuberculosis. By experiments on animals, Delore established that lime salts do not modify in any manner the progress of a tuberculous infection and that they do not become fixed in the tissues. He recommends rather the use of soluble salts, such as calcium chloride, which is more easily absorbed, but he accords these only a very doubtful value.

Tryparsamide in African Sleeping Sickness

The crusade against sleeping sickness in French Equatorial Africa is being prosecuted with vigor. The public health service has created isolation camps and has employed concurrently sodium arsanilate and tryparsamide. Each presents peculiar dangers. The former sometimes attacks the optic nerve; the latter produces, at times, grave abscesses at the site of the injection. The untoward effects of tryparsamide are obviated by employing very dilute solutions in place of the concentrated solutions used heretofore. A report published by Drs. Jamet and Vernon, after an experience of a year in Camp Ayos in Cameroons, where 300 patients are isolated, brings out that tryparsamide thus employed is the best medicament. The mortality rate from African sleeping sickness has been reduced from 17.5 per cent to 4.2 per cent. Remissions extending over more than three years are recorded as recoveries.

The Split in the Syndicate of Physicians of the Seine

The projected law pertaining to social insurance has caused a split in the Syndicat des médecins de la Seine, one faction of which has declared itself absolutely opposed to the projected law, while the other faction still hopes to effect an accommodation with the government. Thus the "Corporative Union" has sprung into existence alongside the more ancient "Syndicat." Today, the danger appears to be more and more threatening. A survey of the field has brought out that 80 per cent of the population, and consequently of the clientele of the physicians, would be able to take advantage of the provisions of the law if passed; that is to say, can claim the privilege of receiving medical treatment on the basis of a ridiculously low tariff scale, and subject to restrictions as to pharmaceutic prescriptions, embarrassed by innumerable formalities that must be complied with, and associated with vexatious delays in the settlement of accounts. If the bill becomes a law, it will bring ruin to the majority of practitioners, while others will be transformed into poorly paid civil servants. Since the early split, a spirit of understanding has begun to be manifest, and since neither of the rival groups (Syndicat and Union corporative) would yield, a new group has been formed comprising the physicians willing to cooperate, belonging to either group. The general assembly has just met and has chosen for the new group the name "Union syndicale des médecins de la région parisienne," which hopes to constitute, through its conservative bearing, a moral force sufficiently strong, still to protect the medical profession against the final passage of the bill at its second reading before the chamber of deputies. But, since the parliamentary elections will take place in six months, and all the candidates have promised their constituents that, through the operation of a new social insurance law, they will receive medical care almost without cost, it is difficult to cherish much further hope of defeating the bill.

Criticism of Methods of Individual Prophylaxis Against Venereal Diseases

The official methods for individual prophplaxis against venereal diseases, which have been widely used (especially since the war), and have been recommended by posters to the general population and applied by the government to the forces of the army and navy, are being subjected at present to sharp criticism. The ointments, especially, have been declared by several observers to be ineffective. They contain insoluble products, such as mild mercurous chloride or soluble mercuric cyanide. The latter, particularly, is being criticized. In the first place, being applicable only to man and not to woman, for whom its use is too caustic and not effective in that it does not reach the critical areas, it accomplishes, from the social point of view, only half the program proposed. The minister of war has received an official report on the results of the use of the cyanide ointment, extending over a period of three years, in five different army corps, in which it was on trial. In comparison with five other army corps not provided with the prophylactic measures, the results were insignificant or even disadvantageous. The percentage of gonorrhea, which was, previous to the experiment, 10.92 cases per thousand men, dropped to 7.51 per thousand, a decline of only 3.41 points. On the other hand, the five army corps in which the prophylactic remedies were not supplied to the soldiers presented, for the same periods, 18.7 cases of gonorrhea per thousand before the beginning of the test and 8.4 at the close, the improvement being 8.4 (or more than double the first result) without any prophylaxis. The results were similar for syphilis. In the group in which prophylaxis was practiced, the number of syphilitic chancres decreased from 3.95 per thousand to 1.24 per thousand, a diminution of 2.71. In the second group, without prophylaxis, the figure dropped from 6.33 per thousand to 1.67 per thousand, or a diminution of 4.66. The number of chancres, at the end of five years, was about the same in both cases, but the diminution was three times as great without prophylaxis. There were even paradoxical cases in which the number of cases

of gonorrhea and the number of chancres frankly increased with the employment of prophylactic measures. These results must, of course, be analyzed and carefully interpreted. It is exceedingly probable that, in many cases, the soldiers did not use the prophylactic remedies placed at their disposal, or did not use them properly. But there are other instances in which the increase of venereal disease can be explained only on the assumption that many soldiers who did not formerly expose themselves to the danger, for fear of possible consequences, ceased to restrain themselves in view of the promised security, which, however, proved illusory. In view of these results, the minister of war did not consider the test to be sufficiently conclusive to justify him in granting the sum of from 12,000,000 to 15,000,000 francs, which he was asked to pay for the extension of the prophylactic system to the whole army.

GENEVA

(From Our Regular Correspondent)

Nov. 25, 1927.

Subcutaneous Anesthesia in Visceral Pain

At a recent meeting of the Society of Leysin Physicians, Prof. M. Roch of Geneva presented a paper on "Subcutaneous Anesthesia in the Treatment of Visceral Pain." Dr. Lemene of Liége published a few months ago an article in which he recorded his cases of visceralgia treated by a new method, this being a subcutaneous injection of procaine hydrochloride (10 cc. of a 1 per cent solution), with the paradoxical result that it calmed pain arising from a deep-seated inflammatory process eight times out of ten. Roch then verified the method. To his surprise, he obtained this result in biliary and renal lithiasis, appendicitis and pleuritic pain involving all viscera and serous membranes innervated by the sympathetic. Subcutaneous anesthesia was ineffective in the pain of locomotor ataxia, neuralgia resulting from a tumor of the cerebellum and in a case of acute rheumatism of the knee. The visceralgia may recur after a varying length of time approximately corresponding to the duration of the action of procaine, yet when it occurs it is always less severe than previously. It goes without saying that the anesthesia in no way influences the causal processes and this is why this method is to be employed prudently in appendicitis, as the patient supposes himself cured and will refuse operation. Yet there is an advantage in that the abdomen may be palpated without rigidity of the walls.

Lemene has attempted to explain the mechanism of this anesthesia. He excludes diffusion of procaine to the seat of the causal agent; the action is too rapid. And for that matter it is not easy to see how diffusion could intervene in the sedation of an attack of angina pectoris or an epigastric pain due to an ulcer located far from the epigastrium, as in a stomach in ptosis. Furthermore, procaine, in the dose exhibited, is not a general anesthetic. Lemene suspects an inhibition of the sensitive nerve transmitted to the sympathetic branches, from metameric nerve connections of the posterior ganglion. Roch is not of this opinion and believes that the pain in reality is located where it is found and not in the affected viscera. There is a kind of viscerosensative reflex, as there is a visceromotor reflex—contraction of the rectus muscles in ulcer of the stomach, for example. If such a reflex exists, the action of procaine is readily explained.

In the discussion following, Dr. Jaquerod, starting from the principle that the pain was seated in the brain, supposed that the field of cerebral localization in the skin was approximately that of the subjacent viscus.

Dr. deReynier observed that in otolaryngology the anesthesia does not extend beyond the limits of diffusion of procaine. On the contrary, surgeons operate on a hernia by anesthetizing only the abdominal wall. The viscera themselves are insensible.

Dr. Piguet (the president) recalled a paper by Professor Forgue of Montpellier, who concluded that the only visceral layer of the serosa was sensitive. Pleural and peritoneal puncture and pleuroscopy were painless, while contact of an instrument with the pulmonary pleura gave rise to pain. Dr. Leuba compared the subcutaneous anesthesia of Lemene to the action obtained with poultices containing tincture of opium. He was convinced that in a case of biliary lithiasis a simple poultice did not have the same effect as when tincture of opium was put on it.

Replying to the last speaker, Roch said that Lemene had mentioned similar local effects by the application of cold. He offered an objection to Dr. Jaquerod's hypothesis which, according to him, meant that anesthesia of a sensitive nerve at the same time anesthetized the entire system of peripheral and central neurons, which would seem improbable.

"Sine Confectione"

Dr. Andre Guisan of Lausanne has had something to say about the prescription *sine confectione*. The federal law of June 23, 1925, on narcotics, has resulted in notifications to the medical profession from the Federal Service of Hygiene, cantonal departments of the interior and the Swiss Society of Pharmacy in respect of the way of interpreting certain rather vague prescriptions.

Among these is the question of *sine confectione*, lengthily discussed, June 2, 1925, at the Aeztlicher Verein der Stadt St. Gallen. In romance (French speaking) Switzerland, the Vaud Society of the Canton of Vaud sent, in December, 1925, a list of "considerations" relating to the Federal law referred to. Regarding the *sine confectione*, among other things it was said: "The physician can remedy this abuse" by prescribing *sine confectione* the specialty that the pharmacist will deliver in one of his own recipients with an increase in price of from 20 to 50 centimes (4 to 10 cents) according to the size of the recipient. Thus the patient will not see the prospectus enveloping each product, where the posology of the drug is also given in detail. The small extra charge of 50 centimes (10 cents) does not compare—for the patient—to what he would have to spend in uselessly renewing the prescription of the specialty first prescribed, without his physician's knowledge. The pharmacists are to request the manufacturers of specialties to give more importance to the name of their products in order to make the *sine confectione* more effective, and it is to be hoped that the medical profession will back this effort.

The increase in price which, *ipso facto*, resulted from the *sine confectione* prescription at length shocked some members of the profession, who, contrary to the advice of the pharmacists, thought that this "little extra" was taken into account by patients sufficiently intelligent to read the prescriptions and that they were irritated that their physicians prescribed in a more expensive form a specialty the price of which they knew.

By a letter of Jan. 10, 1926, the Committee of the Medical Society of the Canton de Vaud made known to the Pharmaceutical Society of the Canton of Vaud the criticisms which had been received respecting the *sine confectione* prescriptions. Jan. 14, 1926, the president and secretary of the latter society replied that "personally they were in accord with the point of view [of the medical society]. They were led to the increase in price by the canton of St. Gall, yet, as was pointed out in the letter [of the medical society], the general public of French speaking Switzerland was more in touch with prices and does not accept the difference in the charges." Since this date the question of *sine confectione* has not been discussed.

The other day, Dr. Guisan had a call from a scientific representative of one of the big manufacturers of chemical and pharmaceutic products which led to the topic of products

delivered to pharmacists in original packages and the increase in price of specialties prescribed *sine confectione*. The subject interested the representative and a few days later Dr. Guisan received a letter from the manufacturer from which the following paragraph is taken: "During the interview you raised the question of prescribing *sine confectione* of specialties. This is delicate and deserves careful study as it results for the patient, the doctor and the manufacturer, in consequences which may be unfortunate. . . . In our opinion, the pharmacist can demand a higher price than the official price of the product."

Taking as a basis the prices set by the federal taxes, which are law in these circumstances, it is easy to see that the pharmacist has the right to ask 3.40 francs (68 cents) when he dispenses a bottle of a certain specialty. In the particular circumstances this practice results in uselessly raising the price of the drug.

Dr. Guisan next points out another more serious question, that of substitution of the original product by one of inferior quality or one not even corresponding to requirement. Dr. Guisan has recently noted that a pharmacist delivered compressed tablets of one specialty in place of the one prescribed, which evidently did not fulfil the intention of the attending physician. This case was settled in court in favor of the physician.

Dr. Guisan thinks that it is dangerous and far from economical to prescribe specialties *sine confectione*, because the pharmacist then has the unquestioned right to remove the drug from its original container.

BERLIN

(From Our Regular Correspondent)

Nov. 26, 1927.

Infant Mortality During the First Days of Life, and Its Relation to Welfare Work in Bavaria

The following data were gathered from an interesting article by Medizinalrat Dr. Seiffert of Munich: About one third of the deaths of infants in Bavaria in 1923 occurred during the first month of life. The mortality from the eleventh day on was considerably higher in rural regions than in the city. Differences in death rates, to the disadvantage of the rural regions, concern the period from the eleventh to the thirtieth day. This period appears to be especially critical. The statistics indicate that the mortality for this period furnishes the first evidence of the influence of an unfavorable environment. Mortality by reason of subnormal vitality during the first month of life explains, during the first month, about two thirds of all deaths. The figures are greater for boys than for girls, and greater for illegitimate children than for legitimate. The rate is higher in the country than in the cities, and the regional differences are pronounced. The causes of mortality during the first days of life have not been carefully studied for Bavaria. Premature birth, intracranial hemorrhages and other effects of labor are doubtless the principal causes of death. The term "subnormal vitality at birth" should be discarded in the statistics of the causes of death. The cases that come under this head should be described more accurately. For example, it should be stated whether premature birth or the effects of labor are involved. In connection with investigations into early deaths, not only are medical examinations of mother and child in order but also inquiries into environmental conditions and the work of the mother. The significance of agricultural work for the mother must be evaluated accordingly. From the statistics, it appears that infant welfare work has exerted a favorable influence from the second to the twelfth month but not so particularly for the first month. The decline of infant mortality in the first month of life appears to be closely connected with changes in woman's work. Infant welfare work should not only begin during the first days of life but should include prenatal care as well. Infant welfare in the country, especially, should be developed more intensively. Infant welfare work in rural regions may be very successful but only on condition that the welfare workers have received adequate training in hygiene and are not merely welfare nurses. Prenatal care, which should be combined with infant welfare work, is just as necessary in the rural sections as it is in the cities.

Age in Relation to Resistance

Professor Kirschner, formerly director of the Chirurgische Universitätsklinik in Königsberg and occupying, of late, a similar position in Tübingen as the successor of the late Professor Perthes, has recently published observations in which he endeavors to prove that resistance to peritonitis depends to a great extent on the age of the subject. According to his results, children and aged persons present the highest mortality, the lowest mortality being found in the 11-15 age group. Or, to express the matter in figures or graphically, a curve is obtained that indicates that the resistance of a human being to death from peritonitis increases, day by day, from the moment of birth up to about the age 15, from which time on it again declines steadily. Kirschner investigated then, on the basis of comprehensive, unequivocal statistical material from his clinic and from the medical literature in general, the question whether peritonitis constituted an exception or whether from the curve of peritonitis any general "law" could be deduced. He found that everywhere, in deaths from intestinal disorders, pneumonia and during epidemics (for instance, the epidemic of cholera in Hamburg in 1892), there is a distinct line running through that agrees essentially with the relations between age and resistance in peritonitis. He established further that the resistance curve shows this course (with the peak at age 15) not only for diseases but also for all injuries that befall mankind during life. The proof for this statement can be definitely furnished from the general mortality statistics of the German *reich*. It appears, according to Kirschner, that there is a regular and definite change taking place in mankind as conditioned by age, which can be expressed in figures. There is a general biologic law in operation, which influences the prognosis of every disorder, and every form of injury to which man is subject. As man is a part of the manifestations of life on earth and is subject to the same great biologic laws as all other living creatures, Kirschner thinks it probable that this law expressing a parallelism between resistance and age is not confined to human beings, but that it is a new biologic law that can be universally applied to all living nature, including man, animals and plants. In collaboration with an assistant, Kirschner subjected various animals and plants to diverse injuries in order to establish more definite figures covering the relations between resistance and age. The application of this biologic law to all nature is probable, and with reference to man Kirschner regards it as definitely proved.

Tuberculosis in the Prisons

At the instance of the ministry of justice of Saxony, the *landesgesundheitsamt* (the provincial public health service) has made definite provisions for the treatment of tuberculous subjects in Saxon jails who are to be transferred to prisons. The regulations emphasize more particularly compulsory notification. The need of such notification is impressed on prison authorities. It is emphasized that, according to the general regulations of Saxony concerning the control of tuberculosis, failure to report cases of tuberculosis is subject to fine or imprisonment. Accompanying the notification there must be a statement showing the probable time of dismissal of prisoners, in order that the health authorities may see to it that they continue to receive the treatment they need.

Marriages

ELEANOR M. TOMPKINS, Pasadena, Calif., to Donald L. Morgan of Aligarh, U. P., India, at Delhi, India, October 26.

FRANCIS WAYLAND BENNETT, Atlantic City, N. J., to Miss Angela da Costa Newbold of Philadelphia, November 9.

MORTON E. HUNDLEY, Martinsville, Va., to Miss Mary Kate Black of Spartanburg, S. C., November 16.

CARLETON MOORMAN, Altavista, Va., to Miss Mary Katharine Smith of Martinsville, November 16.

ROBERT FELIX GILLESPIE, Wilder, Va., to Miss Mary Virginia Jessel of Lebanon, November 16.

GUY CARLTON AMORY, Hilton Village, Va., to Miss Bessie Lee Granger of Richmond, November 26.

ISAAC H. GOLDMAN to Miss Katherine Trauerman, both of Richmond, Va., November 28.

Deaths

Thomas Grange Simons ✠ Charleston, S. C.; Medical College of the State of South Carolina, Charleston, 1867; professor of materia medica at his alma mater; Confederate veteran; at one time member of the state board of medical examiners and state board of health; formerly on the staff of the Roper Hospital, where he died, November 30, aged 84, of carcinoma of the stomach.

Orland Jonas Brown ✠ North Adams, Mass.; University of Vermont College of Medicine, Burlington, 1870; member of the House of Delegates of the American Medical Association, 1908-1910; formerly member of the state legislature; on the staff of the North Adams Hospital; aged 79; died, November 24, of myocarditis and cerebral hemorrhage.

Charles Pons Aimar ✠ Charleston, S. C.; Medical College of the State of South Carolina, Charleston, 1894; professor of general surgery at his alma mater; past president of the Charleston County Medical Society; on the staffs of the Roper Hospital and St. Francis Xavier Infirmary; aged 54; died, December 1, of coronary thrombosis.

Henry Edward Goetz, Knoxville, Tenn.; Lincoln Memorial University Medical Department, Knoxville, 1905; member of the Tennessee State Medical Association; veteran of the Spanish-American War; proprietor of a sanatorium bearing his name; aged 53; died, December 2, at the University Hospital, Philadelphia, of brain tumor.

Frank E. McCullough ✠ Captain, U. S. Navy, retired, Coronado, Calif.; University of California Medical School, San Francisco, 1891; was appointed medical director with the rank of captain in 1919 and was retired in 1925; aged 56; died, August 17, at Portland, Ore., of coronary thrombosis and myocarditis.

James Reed Yocom ✠ Tacoma, Wash.; Harvard University Medical School, Boston, 1888; served during the World War; formerly on the staffs of St. Joseph's Hospital and the Fannie C. Paddock Hospital, now the Tacoma General Hospital; aged 65; died, December 2, in a hospital at Seattle, of heart disease.

Walter Almond Hager ✠ South Bend, Ind.; Jefferson Medical College of Philadelphia, 1891; member of the American Academy of Ophthalmology and Oto-Laryngology; on the staff of the Epworth Hospital, where he died, December 6, of pneumonia, following an operation for appendicitis, aged 64.

Homer Harvey White, Earlville, N. Y.; University of Michigan Medical School, Ann Arbor, 1876; Medical Department of Columbia College, New York, 1877; member of the Medical Society of the State of New York; for six years bank president; aged 77; died suddenly, November 26.

William Henry Bucher ✠ Lieutenant Commander, U. S. Navy, retired, Olive View, Calif.; Medico-Chirurgical College of Philadelphia, 1896; was appointed surgeon with the rank of lieutenant commander in 1903 and was retired in 1909; aged 53; died, September 13, at Los Angeles.

Edward William Finn, Brookline, Mass.; Harvard University Medical School, Boston, 1890; member of the Massachusetts Medical Society; formerly connected with the U. S. Veterans' Bureau; at one time chairman of the board of health of Dedham; aged 59; died, December 1.

David Swan Linvill ✠ Columbia City, Ind.; Detroit College of Medicine and Surgery, 1886; secretary of the Whitley County Medical Society; Spanish American War veteran; formerly city and county health officer; aged 65; died, December 9, of heart disease.

Lester Robert Qua, Pepperell, Mass.; College of Physicians and Surgeons, Boston, 1883; Dartmouth Medical School, Hanover, N. H., 1886; member of the Massachusetts Medical Society; aged 70; died, August 17, at Randolph, Vt., of heart disease.

Jacob Forney Abernathy, Murphy, N. C. (licensed, North Carolina, 1885); formerly member of the city council and county physician; aged 70; died, November 25, as the result of injuries received in an automobile accident four years ago.

Arthur C. Yengling, Salem, Ohio; University of Michigan Medical School, Ann Arbor, 1870; Civil War veteran; for many years member of the school board and board of health; aged 81; died, November 23, of Hodgkin's disease.

Clara Cogdon Simmons, North Scituate, Mass.; Hahnemann Medical College and Hospital, Chicago, 1885; aged 76; died, October 29, at the Massachusetts Homeopathic Hospital, Boston, as the result of a fractured hip.

Clifford Hugh Brooks ✠ Santa Ana, Calif.; State University of Iowa College of Medicine, Iowa City, 1910; member of the Pacific Coast Oto-Ophthalmological Society; aged 42; died, October 18, of angina pectoris.

Giles S. Kelly, Lawrenceville, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1897; member of the Medical Association of Georgia; member of the city council; aged 64; died, December 11.

George F. Chambers, Lusby, Md.; University of Maryland School of Medicine, Baltimore, 1896; member of the Medical and Chirurgical Faculty of Maryland; aged 64; died recently, of cerebral hemorrhage.

John Perry Horle ✠ Flycreek, N. Y.; Syracuse University College of Medicine, 1894; on the staff of the Mary Imogene Bassett Hospital, Cooperstown, where he died, November 19, aged 59, of carcinoma.

Byron Bates Havens, Penn Yan, N. Y.; Bellevue Hospital Medical College, New York, 1876; aged 78; died, November 26, at the Soldiers and Sailors' Memorial Hospital, following a prostatectomy.

John Nathaniel Thaxton, Nashville, Tenn.; Vanderbilt University School of Medicine, Nashville, 1880; also a druggist; aged 70; died, December 1, at the City View Sanitarium, of lobar pneumonia.

Emile Duskes ✠ Baltimore; McGill University Faculty of Medicine, Montreal, Que., Canada, 1923; associate in pathology, University of Maryland School of Medicine; aged 27; died, September 11.

Esther W. Gulick, Stroudsburg, Pa.; Woman's Medical College of Pennsylvania, Philadelphia, 1896; aged 83; died, November 28, at the Germantown Hospital, Philadelphia, of chronic nephritis.

Peyton H. Keaton ✠ Damascus, Ga.; College of Physicians and Surgeons, Baltimore, 1888; aged 64; was found dead in bed, December 7, of an overdose of chloroform taken accidentally.

Oliver A. Lomax, Waynesboro, Miss.; University of Alabama School of Medicine, Tuscaloosa, 1898; member of the Mississippi State Medical Association; aged 59; died, August 28, of heart disease.

John Josiah Mersen, Ypsilanti, Mich.; University of Michigan Medical School, Ann Arbor, 1899; formerly on the staff of the Beyer Memorial Hospital; aged 57; died, July 27, of heart disease.

Robert Lee McCoy, Megargel, Texas (licensed, Texas, by the state board of medical examiners, under the Act of 1907); aged 67; died, July 21, at Ruidosa, N. M., of heart disease.

Fred Arthur Van Arsdale, Chicago; Harvey Medical College, Chicago, 1902; aged 60; died, December 19, at St. Bernard's Hospital, of chronic nephritis and cerebral hemorrhage.

Sarah Jane Braunwarth, Muscatine, Iowa; State University of Iowa College of Medicine, Iowa City, 1876; aged 73; died, November 16, in Chicago, of cerebral hemorrhage.

Mary Dudley Hussey, East Orange, N. J.; Woman's Medical College of the New York Infirmary for Women and Children, 1877; also a lawyer; aged 74; died, October 26.

John Edgar Locke, Picher, Okla.; Eclectic Medical Institute, Cincinnati, 1894; aged 66; died, May 27, at the Freeman Hospital, Joplin, Mo., of carcinoma of the stomach.

Daniel W. Martin, Bethany, Mo.; American Medical College, St. Louis, 1877; Civil War veteran; formerly a minister; at one time a druggist; aged 87; died, October 14.

Ollen Lee Denning, Dunn, N. C.; Jefferson Medical College of Philadelphia, 1889; aged 65; died, December 3, as the result of an injury received in an automobile accident.

Arthur Edward Schnell ✠ Detroit; Homeopathic Medical College of Missouri, St. Louis, 1900; aged 57; died, November 27, of bronchopneumonia and cerebral hemorrhage.

Sidney Walker, Chicago; University of Tennessee College of Medicine, Memphis, 1884; aged 71; died, December 19, at his winter home in New Orleans, of myocarditis.

James Harvey Hargrave, Ardmore, Okla.; Medical Department of the Tulane University of Louisiana, New Orleans, 1901; aged 69; died, October 2, of heart disease.

Walter Thomas Murphey ✠ Albuquerque, N. M.; University of Illinois College of Medicine, Chicago, 1909; aged 44; died, May 16, of pulmonary tuberculosis.

Luther Howard Maloney, Savanna, Ill.; Hahnemann Medical College and Hospital, Chicago, 1884; aged 69; died, August 10, of carcinoma of the stomach.

William Homer Weld, Fort Atkinson, Wis.; Louisville (Ky.) Medical College, 1894; mayor of Fort Atkinson; aged 67; died, December 3, of pneumonia.

Isaac Steven Bigelow ✠ Dubuque, Iowa; Rush Medical College, Chicago, 1881; aged 68; died, December 11, of cerebral hemorrhage and arteriosclerosis.

Howard Lindsay, St. Louis; St. Louis College of Physicians and Surgeons, 1908; aged 53; died, December 3, at the Christian Hospital, of heart disease.

Phoebe H. Flagler Hagenbach, Stroudsburg, Pa.; Woman's Medical College of Pennsylvania, Philadelphia, 1879; aged 95; died, November 29, of senility.

Jeremiah Vanderbilt Reeder, Picture Rocks, Pa.; University of Pennsylvania School of Medicine, 1887; aged 68; died, December 16, of pneumonia.

George E. Bass ✠ Chicago; University of Vermont College of Medicine, Burlington, 1882; aged 72; died, December 14, of cerebral hemorrhage.

Sophia Lee Cochran, Los Angeles; Kansas City Hahnemann Medical College, 1912; aged 59; died, October 30, of cerebral hemorrhage.

Calvin J. Floyd, Durant, Okla.; Vanderbilt University School of Medicine, Nashville, Tenn., 1886; aged 66; died, recently, of nephritis.

George L. Alexander ✠ Forsyth, Ga.; Atlanta Medical College, 1893; also a druggist; aged 55; died, December 9, of heart disease.

Bruce L. Calhoun, Verona, Pa.; Cincinnati College of Medicine and Surgery, 1876; aged 83; died, October 9, of heart disease.

Lady M. Johnson Durrett Morgan, Boulder, Colo.; Woman's Medical College of Baltimore, 1897; aged 52; died, March 18, at Denver.

Charles Benjamin Hoit ✠ Liberty, Maine; Medical School of Maine, Portland, 1897; aged 60; died, October 4, of heart disease.

William Albert Cummins, Malvern, Ark. (licensed, Arkansas, 1903); aged 53; died, April 7, of cerebral hemorrhage.

Daniel Eliot Wetzel, Denver; Louisville (Ky.) Medical College, 1879; aged 77; was found dead in bed, November 4.

Myron Lafayette Downs, Douglas, Ariz.; Jefferson Medical College of Philadelphia, 1899; aged 56; died, in November.

Thomas G. McClure, Douds, Iowa; College of Physicians and Surgeons, Keokuk, 1878; aged 76; died, September 11.

James Kennedy Irwin, Pittsburgh; Jefferson Medical College of Philadelphia, 1888; aged 65; died, November 29.

William H. Lewis, Wichita Falls, Texas; Memphis Hospital Medical College, 1900; aged 62; died, August 13.

George Osborne, Centerview, Mo.; Barnes Medical College, St. Louis, 1909; aged 53; died suddenly, November 11.

Claude M. Hughes, Cedar Grove, N. C.; Atlanta (Ga.) Medical College, 1895; aged 58; died, November 25.

Samuel L. Kistler ✠ Los Angeles; Starling Medical College, Columbus, 1882; aged 68; died, October 23.

William M. Bright, Chuckey, Tenn.; Chattanooga Medical College, 1909; aged 40; died, November 29.

Edmund J. Martin, Denver (licensed, Colorado, 1922); aged 46; died, November 11.

Correspondence

NONSURGICAL BILIARY TRACT DRAINAGE

To the Editor:—The article of Dr. C. L. Hartsock of Cleveland on migraine (THE JOURNAL, Oct. 29, 1927) was of interest, especially the paragraph mentioning the efficacy of nonsurgical biliary tract drainage in cases presenting symptoms of biliary and duodenal stasis.

During the last six years I have treated forty-eight persons suffering from migraine, or so so-called bilious headaches. Four of these had had the gallbladder surgically drained, and two the gallbladder removed. All had suffered for ten or more years, and about half were unable to pursue a gainful occupation. These patients had run the gamut of medical therapeutics, with only temporary relief. All were given nonsurgical biliary tract drainage, generally at frequent intervals at first, and then at longer intervals. None were encouraged to expect favorable results under ten drainages; in fact, some of them have taken as many as seventy-five. These patients have had all intercurrent ills looked after as thoroughly as possible, for most of them had other ailments besides migraine. Clinically speaking, good results have been apparently attained with every patient who took ten or more drainages. The six who had undergone gallbladder surgery seemed to derive as much benefit as the others. Twenty of these sufferers have seemingly been entirely relieved. Most of these patients still come in at periods varying from three weeks to three months, for they seem to need these drainages, lest they relapse into their former state.

This form of treatment cannot be of harm, and it holds the probability of decided relief in a measurable proportion to these discouraged, and, ofttimes repining, invalids.

GEORGE M. NILES, M.D., Atlanta, Ga.

THE COMPOSITE NATURE OF VITAMIN B

To the Editor:—May I be permitted to correct an erroneous impression that, it seems to me, is conveyed by your editorial "The Composite Nature of Vitamin B" (THE JOURNAL, Dec. 10, 1927).

Among other things, this editorial states that "Chick and Roscoe have demonstrated through the use of rats and highly purified rations that in yeast there exist two factors, one antineuritic and the other preventing the appearance of the pellagra-like symptoms in rats given a deficient ration." This would seem to convey the idea that Chick and Roscoe were the first to make this demonstration. As a matter of fact such is not the case nor, what is more, do Chick and Roscoe make any such claim. On the contrary, they state that their experiments "confirm the work of Goldberger and his colleagues and support the conclusion drawn by those workers and the other observers already referred to, that McCollum's water-soluble B vitamin and Eykman's antineuritic substance are not identical" (*Biochem. J.* **21**:700, 1927).

In order that the record may be kept straight, permit me to say that, although a long list of workers have more or less strongly urged the view that vitamin B is of a dual nature consisting, it was claimed, of an "antineuritic" and of a "growth-promoting" factor, the first clean-cut demonstration that vitamin B included at least two distinct factors, *neither of which in the absence of the other is "growth-promoting,"* was made in the Hygienic Laboratory by Goldberger, Wheeler, Lillie and Rogers (*Pub. Health Rep.* **41**:297-318 [Feb. 19] 1926). One of these factors is Eykman's antineuritic substance and the other is either the pellagra-

preventing factor ("P-P") of Goldberger and Tanner (*Pub. Health Rep.* **40**:54-80 [Jan. 9] 1925) or one closely associated therewith. They have been designated as vitamins F and G, respectively, by Sherman (*J. Chem. Education* **3**:1244, 1926).

G. W. McCoy, M.D., Washington, D. C.
Director Hygienic Laboratory, U. S. P. H. S.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

CZECHOSLOVAK CONTRIBUTIONS TO MEDICINE AND SCIENCE

To the Editor:—I would appreciate some information on Czechoslovak contributions to science and medicine, either in this country or abroad. Have you any information or literature on the subject, or could you refer me to any source where I could obtain the information? Such men as Purkinje, Kukula, Marek and Czerny are outstanding figures abroad, and such Czech-Americans as Novy, Ales Hrdlick (anthropology) and Spitzka in America.

JOSEPH J. JELINEK, M.D., Los Angeles.

ANSWER.—The political conditions prevailing up to the last quarter of the nineteenth century account for the fact that major Czechoslovak contributions to science were listed as of Austrian or German origin. Skoda and Rokitansky are prominent examples. There was only one outstanding exception to this rule: the physiologist Purkynĕ, who may be regarded as the foremost Czech physician. The Czech medicine developed together with the German and—in spite of the political preference for the French—the teaching and the lines of research at the three Czechoslovak universities differ only in the language from those at the Austrian and German schools. Quite a few of the Czech contributions are lost to science because of the language. For instance, the frequency of syphilitic origin of aortitis in middle aged subjects seems to have been first noted by Thomayer, but no one mentions his name. Czech authors, who have published in German, are much better known, for instance the surgeons Albert and Maydl. The pathologist Hlava was a man of stupendous learning, whose personality alone would have made him the continental leader in his branch. Yet he is almost unknown and not even his pioneer work on experimental hemorrhagic pancreatitis is discussed in the accessible literature. Although there do not seem to be any men of this class in the present generation, a good majority of them are of the solid plodding type, striving to teach the art and science according to the best tradition and ecouraging further progress of promising young men of the leading national and racial group.

As to the other sciences, the conditions are similar. Hrozný's solution of the problem of the language of the Hittites is one of the outstanding recent contributions in this field. Mathematics and chemistry are also of a high grade. It might be going too far to mention here Kekule von Stradonitz, who was a descendant of the persecuted Czech emigrants, but it is fair to mention Comenius, the father of visual instruction, who was himself an exiled bishop of the Bohemian ("Moravian") Brothers.

MECHANICAL METHOD OF TREATING MYOPIA

To the Editor:—I am informed by a patient that a physician, supposedly of reputable standing, offered to treat her with a machine which was guaranteed to cure myopia, or at least reduce the strength of it in every case. If there is such an instrument on the market, I would appreciate it as a personal courtesy if you will send me the address of the people who make it. I was convinced that if such an instrument was made, your organization would have heard something of it.

W. MOORE THOMPSON, M.D., Chicago.

ANSWER.—"Supposedly of reputable standing," like charity, covers a multitude of sins. In the first place, there is no machine, either on or off the market, which can cure or reduce or even influence myopia in the slightest degree. In the second place, no physician, even "supposedly of reputable standing," can or will guarantee a cure in any condition of serious import, much less in one so uninfluenceable as myopia. There is an ocular "massage" or "exercising" machine manufactured in Los Angeles for which the claim is made that its use reduces myopia. But the claims are farcical!

TREATMENT OF STOMATITIS

To the Editor:—I have a patient who for the past two years has been having a stomatitis. The inside of the lips, the gums and the tongue are very red and inflamed. He has a feeling of marked burning in the mouth. There is no exudate nor coating. The condition is not a Vincent's angina. The patient has no teeth; he wears complete upper and lower plates. He has tried many things for treatment without relief. What can you advise for the condition? Please omit name.

M.D., Illinois.

ANSWER.—It is assumed that no local lesions are present, such as characterize pemphigus, scurvy or mercurialism. The persistence of the condition rules out pellagra and erythema multiforme. Bacterial infection has no doubt been eliminated along with Vincent's infection. Persistent stomatitis, when afebrile, suggests diabetes, some disorder lower in the gastro-intestinal tract, leukemia, severe anemia or, possibly, gout. In the absence of such underlying condition, only general supportive and symptomatic local treatment are left. The possible interference with nutrition due to long continued sore mouth should be corrected by a diet rich in vitamins. Even though no shortage of gastric acidity is determined on examination of the gastric juice, dilute hydrochloric acid may be tried.

No doubt potassium chlorate has already been tried internally and as a mouth wash, as well as hydrogen peroxide solution, one of the sodium hypochlorite solutions, and weak zinc chloride solution. Ultraviolet rays might prove helpful but should first be tried on a small area. Roentgen rays or radium are more likely to be of benefit, in dosage below that causing any reaction.

WASSERMANN TEST

To the Editor:—We run our Wassermann tests once a week and sometimes the results on the serums held for a week in the icebox are unsatisfactory. Is there not some preservative that can be used? Please omit name.

M.D., Missouri.

ANSWER.—It is common knowledge that serums kept for some time, even in the icebox, may prove unsatisfactory for use in the Wassermann tests owing to the development of such marked anticomplementary properties that they will almost completely inhibit hemolysis. For this reason serums should be used as fresh as possible. If it is desired to preserve the serums until such time as the tests are to be run, they may be sealed in ampules and heated in a water bath at 56 C. for half an hour, which serves both to inactivate the serums and to kill off all bacteria with the exception of the spore-bearing types. Ruediger (*Philippine J. Sc.* **11**:1, 87, 1917) advises the use of an equal quantity of sterilized pure glycerol. However, glycerin may itself show anticomplementary action, so that an amount equivalent to that introduced into the test with the serum should be used in all tubes of the complement titration.

TUBERCULOUS ISCHIORECTAL ABSCESS

To the Editor:—Would you kindly outline the latest and best treatment for ischiorectal abscess of tuberculous origin, especially one of chronic type? Please omit name.

M.D., Indiana.

ANSWER.—During the acute stage, simple incision of a tuberculous ischiorectal abscess is all that should be attempted.

In a patient with pulmonary tuberculosis, as little operating as possible should be done until the patient has gained good resistance, because any infected wound will heal poorly and the general condition may be made worse by operation.

A large percentage of the cases occur in patients in good general condition without pulmonary tuberculosis. In these, the prognosis is ordinarily good.

The best treatment is excision of the characteristically extensive thickened tissue. Healing will occur slowly, and on this account it will frequently be necessary to operate a number of times, but each time the cavity and sinuses will be smaller. The period of operative treatment will often extend from three to five years.

ANIMAL AND VEGETABLE FAT

To the Editor:—Can vegetable fat be used for an indefinite period in the preparation of food?

ANASTASIO DEL RIO, M.D., Barranquilla, Colombia.

ANSWER.—The use of vegetable fat instead of animal fat for ordinary cooking purposes for a long period of time apparently is satisfactory.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, Jan. 10-13. Sec., Dr. S. W. Welch, 519 Dexter Ave., Montgomery.

ARIZONA: Phoenix, Jan. 3-4. Sec., Dr. W. O. Sweek, 404 Heard Bldg., Phoenix.

COLORADO: Denver, Jan. 3. Sec., Dr. Philip Work, 324 Metropolitan Bldg., Denver.

CONNECTICUT: New Haven, Feb. 11. Chm., Bd. of Healing Arts, Dr. Charles M. Bakewell, New Haven.

DISTRICT OF COLUMBIA: Washington, Jan. 10. Sec., Dr. E. P. Copeland, 1801 Eye St., Washington.

HAWAII: Honolulu, Jan. 10-13. Sec., Dr. James A. Morgan, Young Bldg., Honolulu.

ILLINOIS: Chicago, Jan. 10-12. Supt., Mr. V. C. Michels, Springfield.

KANSAS: Topeka, Feb. 14. Sec., Dr. Albert S. Ross, Sabetha.

MINNESOTA: Minneapolis, Jan. 17-19. Sec., Reg. Bd., Dr. A. E. Comstock, 636 Lowry Bldg., St. Paul. Basic Science Bd., Jan. 3. Sec., Dr. E. T. Bell, U. of Minnesota.

NATIONAL BOARD OF MEDICAL EXAMINERS: Class A Medical Schools, Feb. 15-17. Dir., Dr. Everett S. Elwood, 1600 Walnut St., Philadelphia.

NEW YORK: Albany, Buffalo, New York and Syracuse, Jan. 24-27. Sec., Dr. H. Rypins, Education Bldg., Albany.

NORTH DAKOTA: Grand Forks, Jan. 3-6. Sec., Dr. G. M. Williamson, Grand Forks.

OREGON: Portland, Jan. 3-5. Sec., Dr. M. K. Hall, 816 Pittick Bldg., Portland.

PENNSYLVANIA: Philadelphia, Jan. 31-Feb. 4. Dir., Mr. C. D. Koch, Harrisburg.

RHODE ISLAND: Providence, Jan. 5-6. Sec., Dr. B. U. Richards, State House, Providence.

SOUTH DAKOTA: Pierre, Jan. 17. Dir., Dr. H. R. Kenaston, Bonesteel.

VERMONT: Burlington, Feb. 14. Sec., Dr. W. Scott Nay, Underhill.

WASHINGTON: Seattle, Jan. 16. Dir., Reg. Bd., Mr. Chas. R. Maybury, Olympia. Dir., Basic Science Bd., Mr. Clas. R. Maybury, Olympia.

WISCONSIN: Madison, Jan. 10-12. Sec., Reg. Bd., Dr. R. E. Flynn, 315 State Bank Bldg., La Crosse. Sec., Basic Science Board, Prof. M. F. Guyer, U. of Wisconsin.

WYOMING: Cheyenne, Feb. 1-3. Sec., Dr. G. M. Anderson, Citizens Bank Bldg., Cheyenne.

New York January Examination

Mr. H. J. Hamilton, chief, Education Department of the New York State Board of Medical Examiners, reports the written examination held at Albany, Buffalo, New York and Syracuse, Jan. 24-27, 1927. The examination covered 8 subjects and included 10 questions. An average of 75 per cent was required to pass. Of the 210 candidates examined, 154, including 3 osteopaths, passed, and 56, including 5 osteopaths, failed. The following colleges were represented:

College	PASSED	Year Grad.	Number Passed
University of Arkansas School of Medicine		(1926)	4
Yale University School of Medicine	(1925, 3)	(1926)	4
George Washington Univ. Med. School	(1925, 2)	(1926, 3)	5
Georgetown University School of Medicine	(1925, 2)	(1926)	3
Howard University School of Medicine	(1925, 3)	(1926)	4
Emory University School of Medicine		(1925)	1
University of Georgia Medical Department		(1925)	1
Northwestern University Medical College		(1926)	1
Rush Medical College		(1922)	2
University of Illinois College of Med.	(1911)	(1924) (1926)	3
Indiana University School of Medicine		(1925)	1
Univ. of Louisville School of Medicine	(1924)	(1926, 3)	4
Tulane Univ. of Louisiana School of Med.		(1922) (1924, 2)	3
Johns Hopkins University School of Medicine		(1924) (1926)	2
University of Maryland School of Medicine and the College of Physicians and Surgeons		(1926)	1
Boston University School of Medicine	(1925, 2)	(1926, 6)	8
Harvard University Medical School	(1923)	(1925, 4)	5
Tufts College Medical School	(1924, 3)	(1925) (1926, 3)	7
Univ. of Michigan Med. School	(1924, 2)	(1925, 2) (1926)	5
St. Louis University School of Medicine		(1925)	1
Washington University School of Medicine		(1924)	2
Univ. of Nebraska College of Med.	(1924, 2)	(1925) (1926)	4
Columbia University College of Phys. and Surgs.		(1924) (1926)	2
Cornell University Medical School		(1926)	1
Long Island College Hospital		(1925) (1926)	2
New York Homeo Med. College and Flower Hospital		(1920)	1
University and Bellevue Hospital Medical College		(1927)	1
University of Buffalo School of Medicine		(1926)	1
Eclectic Medical College, Cincinnati		(1926)	2
University of Oregon Medical School		(1925)	1
Hahnemann Medical College and Hospital of Philadelphia, Homeopathic		(1926)	3
Jefferson Medical College of Philadelphia		(1924) (1925)	2
Medico-Chirurgical College of Philadelphia		(1910) (1916)	2
University of Pennsylvania School of Medicine (1917) (1921) (1925, 2) (1926, 2)			6
Univ. of Pittsburgh School of Medicine		(1925) (1926)	2
Woman's Medical College of Pennsylvania	(1925, 2)	(1926)	3
University of Tennessee College of Medicine		(1926)	1
Vanderbilt University School of Medicine		(1925) (1926)	2
Baylor University College of Medicine		(1921) (1926)	2
University of Texas School of Medicine	(1904)	(1921) (1926)	3
University of Vermont School of Medicine		(1926)	2
Medical College of Virginia		(1926)	2
University of Virginia Department of Medicine		(1923)	1
Dalhousie University Faculty of Medicine		(1926)	1
McGill Univ. Faculty of Med.	(1921) (1923, 2)	(1924) (1925)	5
Queen's Univ. Faculty of Med.	(1923) (1924, 2)	(1926, 2)	5
University of Toronto Faculty of Medicine	(1922)	(1925)	2
University of Vienna, Austria		(1916)*	1
German University of Prague, Czechoslovakia	(1921)*	(1922)*	2
University of Toulouse, France		(1922)	1
University of Berlin, Germany		(1925)*	1
University of Jena, Germany		(1914)	1
University of Kiel, Germany		(1922)	1
University of Munich, Germany	(1920)*	(1925)	2
University of Wurzburg, Germany		(1920)	1
University of Athens, Greece		(1914)	1
University of Szegedin, Hungary		(1923)	1
National University of Ireland		(1925)	1
Queen's University, Ireland		(1923)	1
University of Messina, Italy		(1923)*	1
University of Naples, Italy		(1920)	1
University of Palerma, Italy		(1922)*	1
University of Rome, Italy		(1921)	1
University of Cluj, Roumania		(1921)*	1
University of Kharkov, Russia		(1912)*	1
University of Moscow, Russia		(1917)	1
University of Madrid, Spain		(1920)*	1
University of Berne, Switzerland		(1912)*	1
University of Geneva, Switzerland		(1917)	1
American University Medical School, Syria		(1926)	1
Osteopaths			3

College	FAILED	Year Grad.	Number Failed
Howard University School of Medicine		(1922)	2
Loyola University School of Medicine		(1926)	1
Baltimore Medical College		(1904)	1
Tufts College Medical School		(1920) (1926)	2
University of Michigan Medical School		(1922)	1
University and Bellevue Hospital Medical College		(1925)	1
University of Oklahoma School of Medicine		(1926)	1
Meharry Medical College		(1926)	1
Dalhousie University Faculty of Medicine		(1923) (1926)	2
McGill Univ. Faculty of Med.	(1914)	(1924) (1925)	3
University of Vienna, Austria	(1917)*	(1923)* (1925)*	3
University of Havana, Cuba		(1921)	1
Comenian University, Czechoslovakia		(1920)*	1
University of Berlin, Germany		(1923)*	1
University of Leipzig, Germany	(1925)	(1926)*	2
University of Munich, Germany		(1922)*	1
University of Athens, Greece	(1922)	(1923)*	2
University of Catania, Italy		(1922)	1
University of Genoa, Italy		(1925)*	1
University of Naples, Italy	(1899)*; (1900)*; (1921, 2) (1923, 8); (1924*; (1926)		14
University of Palermo, Italy	(1921, 2)*	(1923)*	3
University of Pavia, Italy		(1921)	1
University of Lemberg, Poland		(1918)*	1
Dragomanov Institute, Russia		(1922)*	1
University of Kharkov, Russia		(1918)*	1
University of Leningrad, Russia		(1913)*	1
University of Moscow, Russia		(1911)*	1
Osteopaths			5

Mr. Hamilton also reports that 44 candidates were licensed by endorsement of their credentials and 8 were licensed on the basis of their diplomas from Feb. 1 to May 1, 1927. The following colleges were represented:

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Reciprocity with
Cooper Medical College, San Francisco		(1904)	California
George Washington University Medical School		(1921)*	Porto Rico
Georgetown University School of Medicine		(1908)	Connecticut
Howard University School of Medicine		(1917)	Virginia
Northwestern University Medical School		(1921)	Illinois
College of Physicians and Surgeons, Baltimore		(1892)	N. Carolina
(1909) Porto Rico			
Johns Hopkins University School of Medicine (1923) N. B. M. Ex.		(1921)	Connecticut
University of Maryland School of Medicine and the College of Physicians and Surgeons		(1916)	Ohio
Boston University School of Medicine (1923) California		(1910) (1915)	Mass.
Harvard University Medical School		(1921)	Connecticut
Tufts College Medical School		(1903)	Mass.
University of Michigan Medical School		(1921)	Michigan
Dartmouth Medical College		(1897)	Mass.
Albany Medical College		(1925)	N. B. M. Ex.
Columbia University College of Phys. and Surgs.		(1925)	Virginia
Cornell University Medical College		(1925)	N. B. M. Ex.
Syracuse University College of Medicine		(1925)	N. B. M. Ex.
University and Bellevue Hospital Medical College		(1903)	Iowa
Eclectic Medical Co., Cincinnati		(1925)	Ohio
Ohio State University College of Medicine		(1925)	Ohio
University of Cincinnati College of Medicine		(1918)	Ohio
Western Reserve Univ. School of Medicine		(1916) (1923)	Ohio
Hahnemann Medical College and Hospital of Philadelphia, Homeopathic		(1901)	New Jersey
Medico Chirurgical College of Philadelphia		(1913)	Penna.
University of Pennsylvania School of Medicine (1923) N. B. M. Ex.		(1919)	Iowa
Woman's Medical College of Pennsylvania		(1907)	New Jersey
University of Vermont College of Medicine		(1925)	N. B. M. Ex.
Medical College of Virginia		(1915) (1923) (1925, 2)	Virginia
University College of Medicine, Richmond		(1908)	Virginia
McGill University Faculty of Medicine		(1911)	Ontario
University of Western Ontario Medical School		(1916)	Ontario
University of Naples, Italy		(1916)*	New Jersey
Dragomanov Institute, Russia		(1917)	New Jersey
University of Kharkov, Russia		(1912)*	New Jersey
University of Moscow, Russia		(1909)*	N. B. M. Ex.

College	LICENSED BY DIPLOMA	Year Grad.	Number Licensed
Hahnemann Medical College and Hospital		(1884)	1
Harvard University Medical School		(1893)	1
University of Michigan Medical School		(1880)	1
Vanderbilt University School of Medicine		(1886)	1
University of Berlin, Germany		(1914)	1
University of Szegedin, Hungary		(1914)	1
University of Edinburgh, Scotland		(1905)	1
University of Constantinople, Turkey		(1914)*	1

* Verification of graduation in process.

Book Notices

MENTAL HYGIENE. By Daniel Wolford La Rue, Ph.D. Cloth. Price, $2.20. Pp. 443, with 17 illustrations. New York: Macmillan Company, 1927.

For the physician who is interested in human behavior and the factors that govern it, Dr. La Rue has prepared a simple outline. It is planned particularly as a textbook for college students. He traces the relationship between the mind and human diseases, he accepts the practical demonstrations of telepathy, and he is convinced that religion is a most important factor for health. He lists five series of rules for mental hygiene, including inheritance, hygiene of the body and the brain, environment, self adjustment and self management. The book is helped in its interest by the citation of cases. Each chapter concludes with suggestions for further study, topics for special investigation and report, and a list of references.

DIE CHIRURGIE: Eine zusammenfassende Darstellung der allgemeinen und der speziellen Chirurgie. Herausgegeben von Prof. Dr. M. Kirschner und Prof. Dr. O. Nordmann. Band V. Lieferung 16. Die Chirurgie des Darmes. Von Prof. Dr. O. Kleinschmidt und Prof. Dr. J. Hohlbaum. Ueber Eingeweidesenkung. Von Geh. Med.-Rat. Prof. Dr. E. Payr. Paper. Price, 24 marks. Pp. 845-1240, with 106 illustrations. Berlin: Urban & Schwarzenberg, 1927.

DIE CHIRURGIE: Eine zusammenfassende Darstellung der allgemeinen und der speziellen Chirurgie. Herausgegeben von Prof. Dr. M. Kirschner und Prof. Dr. O. Nordmann. Band II. Lieferung 17. Die Geschwülste. Von Prof. Dr. H. Coenen. Die Chirurgie der parasitären Erkrankungen. Von Prof. Dr. G. Hoseмann. Paper. Price, 20 marks. Pp. 391, with 214 illustrations. Berlin: Urban & Schwarzenberg, 1927.

DIE CHIRURGIE: Eine zusammenfassende Darstellung der allgemeinen und der speziellen Chirurgie. Herausgegeben von Prof. Dr. M. Kirschner und Prof. Dr. O. Nordmann. Lieferung 18. Band II. Teil 2. Die Chirurgie der Lunge. Von Prof. Dr. A. W. Meyer. Fremdkörper in den Luftwegen. Von Priv.-Doz. Dr. H. Frenzel. Die Tracheo-Bronchoskopie. Von Priv.-Doz. Dr. H. Frenzel. Die Chirurgie der Pleura. Von Prof. Dr. F. Landois. Die Chirurgie des Zwerchfells und des Nervus phrenicus. Von Prof. Dr. F. Landois. Paper. Price, 21 marks. Pp. 275-548, with 147 illustrations. Berlin: Urban & Schwarzenberg, 1927.

The sixteenth, seventeenth and eighteenth sections of Die Chirurgie have appeared. Section 16 is devoted to the surgery of the intestines and to visceroptosis, section 17 to neoplasms and to the surgery of parasitic diseases, and section 18 to surgery of the lung, pleura and diaphragm and to bronchoscopy. The same comments made concerning the former sections apply to these. There is a wealth of material presented; the chapters, many of them monographs, show careful study; the subject matter is presented in logical sequence. However, it is doubtful whether the books will appeal to the average American reader. The material is not readily accessible, the arrangement not being conducive to ready reference in the way offered by many of our modern American systems.

BLOOD-PRESSURE, ITS CLINICAL APPLICATIONS. By George William Norris, A.B., M.D., Professor of Clinical Medicine in the University of Pennsylvania, Henry Cuthbert Bazett, M.B., B.Ch., F.R.C.S., Professor of Physiology in the University of Pennsylvania and Thomas M. McMillan, A.B., M.D., Assistant Physician to the Pennsylvania Hospital. Fourth edition. Cloth. Price, $4.50. Pp. 387, with 48 illustrations. Philadelphia: Lea & Febiger, 1927.

This opens with two excellent chapters on physiologic considerations. A discussion of the instruments for estimating blood pressure is followed by chapters on capillary and venous pressure, normal and abnormal blood pressure, and the functional efficiency of the circulation as determined by blood pressure estimation and allied tests. One serviceable test, the cardiorespiratory test of Frost, is not included. Then come chapters on hypotension, blood pressure in infectious disease, arterial hypertension, blood pressure in cardiac disease, in arteriosclerosis, in relation to the endocrine glands, in diseases of the central nervous system, in surgery, in obstetrics and in ophthalmology, the last four by specialists in those branches. All recent work on blood pressure is covered completely. As might be expected, no definite conclusions are drawn, for that is impossible in view of the little really known about the etiology of pathologic blood pressures, whether above or below normal. The importance of heredity and the probability that hypertension is associated with the absorption of toxic pressor substances are stressed. The possible rôle of a deranged calcium-sodium-potassium balance is also mentioned. The authors concur in the now generally accepted idea that the changes in the kidneys are secondary to vascular changes induced by the hypertension or its causative factor and not primary causes of the hypertension.

INSURABILITY, PROGNOSIS AND SELECTION. LIFE, HEALTH, ACCIDENT. A Treatise on Various Factors That Permit a Forecast of Health and Longevity, Selection of Risk for Insurance and Appraisal of Claim for Indemnity. By H. W. Dingman, M.D., Vice-President Continental Assurance Company. Cloth. Price, $15. Pp. 706. Chicago: Spectator Company, 1927.

Here, under one cover, are the data concerned with the knowledge by which medical examiners determine whether or not a human being constitutes what the insurance companies call a good risk. The book, which is divided into four parts, describes the development of the mortality tables, and considers the personalities of all the figures of importance in the insurance field and the characteristics necessary for success as applicant agent, examiner, etc. The third part of the book deals with the general elements of insurability, and the fourth part provides a consideration of all the different diseases from which mankind suffers and their relationship to the determination as to whether or not the person who has been afflicted with such a disease constitutes a suitable risk for an insurance company. The data in this volume should be invalauble to any one interested in insurance medicine.

FEEDING AND THE NUTRITIONAL DISORDERS IN INFANCY AND CHILDHOOD. By Julius H. Hess, M.D., Professor and Head of the Department of Pediatrics, University of Illinois College of Medicine. Cloth. Price, $4.50 net. Pp. 566, with 45 illustrations. Philadelphia: F. A. Davis Company, 1927.

This popular book, as revised, takes into account the developments in the field of artificial feeding of infants during the past two years. Diets have been added for children up to and including the sixth year, and the chapters dealing with rickets, scurvy, spasmophilia, acidosis and anemia have been especially reviewed in the light of recent knowledge. A special chapter on celiac disease is a well illustrated and competent addition. The book is excellently printed and full of hints for the general practitioner who gives attention to the diseases of children.

POEMS. By Edwin Downer Helm. Pp. 169. Chicago: Blakely-Oswald Printing Company, 1927.

Medical poets appear not infrequently in the profession. The author of the collection was long a practitioner of Illinois, a former assistant of Dr. Willard Parker, and a competent physician. He had a gift for rhyming, based apparently on an extensive vocabulary and a philosophy of life that included humor and contentment. All the poems are tinted with scientific atmosphere, and few, if any, are wholly medical.

THE ESSENTIALS OF OTOLOGY. By George Birmingham McAuliffe, A.B., M.D., F.A.C.S., Assistant Professor of Otology, Cornell Medical College. Cloth. Price, $4. Pp. 177, with 46 illustrations. New York: Oxford University Press, 1927.

This small textbook represents to a large extent the individual opinion of the author gained over many years of teaching experience. While one may differ with him on points of minor detail, the book in the main impresses one with its sound judgment and conservative tone. One might wish that, in these smaller works, authors would use a profusion of illustrations in order to overcome the small amount of printed space.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits. Books listed in this department are not available for lending. Any information concerning them will be supplied on request.

PLASTIC SURGERY OF THE ORBIT. By J. Eastman Sheehan, Professor of Plastic Surgery, New York Post-Graduate Medical School and Hospital. With a preface by Pierre Sebileau, professeur de la Faculté de médecine de Paris. Cloth. Price, $12. Pp. 348, with illustrations New York: Macmillan Company, 1927.

Handsomely prepared volume of surgical technic of repair of eye injuries.

A SYNOPSIS OF SURGERY. By Ernest W. Hey Groves, M.S., M.D., B.Sc., Surgeon to the Bristol General Hospital. Eighth edition. Cloth. Price, $5. Pp. 674, with 161 illustrations. New York: William Wood & Company, 1927.

The outline of surgery used as a "crammer" by many students.

FINDING THEMSELVES: The Letters of an American Army Chief Nurse in a British Hospital in France. By Julia C. Stimson, M.A., R.N., Superintendent of Army Nurse Corps, United States Army. Cloth. Price, $2. Pp. 231. New York: Macmillan Company, 1927.

Another volume of war records and reminiscences.

OUTLINE OF MATERIA MEDICA AND SPECIAL THERAPEUTICS. By Sister M. Domitilla, B.S., R.N., Educational Director and Instructor, Saint Mary's School of Nursing, Rochester, Minnesota. Paper. Price, $1.50 net. Pp. 101. Philadelphia: W. B. Saunders Company, 1927.

Paper covered outline for nurses.

THE NORMAL DIET. A Simple Statement of the Fundamental Principles of Diet for the Mutual Use of Physicians and Patients. By W. D. Sansum, M.S., M.D., F.A.C.P., Director of the Potter Metabolic Clinic, Department of Metabolism, Santa Barbara Cottage Hospital. Second edition. Cloth. Price, $1.50. Pp. 136, with 1 illustration. St. Louis: C. V. Mosby Company, 1927.

SPECIAL DENTAL PATHOLOGY. A Treatise for Students and for Practitioners of Dentistry and Medicine. By Julio Endelman, M.S., D.D.S., F.A.C.D., Professor of Special Dental Pathology and Therapeutics, College of Dentistry, University of Southern California. Second edition. Cloth. Price, $7. Pp. 444, with 371 illustrations. St. Louis: C. V. Mosby Company, 1927.

LECTURES ON THE BIOLOGIC ASPECTS OF COLLOID AND PHYSIOLOGIC CHEMISTRY. A Series of Lectures Given at the Mayo Foundation and the Universities of Minnesota, Iowa, Washington (St. Louis), and the Des Moines Academy of Medicine, Iowa 1925-1926. Cloth. Price, $2.50 net. Pp. 244, with 85 illustrations. Philadelphia: W. B. Saunders Company, 1927.

THE METHODS OF CLINICAL DIAGNOSIS. By Alexander George Gibson, M.D., F.R.C.P., Honorary Physician to the Radcliffe Infirmary, and William Tregonwell Collier, M.D., M.R.C.P., Honorary Assistant Physician to the Radcliffe Infirmary. Cloth. Price, $5. Pp. 398, with 140 illustrations. New York: Longmans, Green & Company, 1927.

DAS ZELLSTIMULATIONSPROBLEM IN ANWENDUNG AUF MEDIZIN UND LANDWIRTSCHAFT. Von Prof. Dr. Methodi Popoff. Neue Folge, Heft 3 zu Fortschritte der naturwissenschaftlichen Forschung. Herausgegeben von Prof. Dr. Emil Abderhalden. Paper. Price, 2.40 marks. Berlin: Urban & Schwarzenberg, 1927.

PUBLIC HEALTH LAWS AND REGULATIONS ADOPTED DURING 1926. Compiled by William Fowler, LL.B., United States Public Health Service. Supplement No. 65 to the Public Health Reports. Paper. Price, 30 cents. Pp. 204. Washington: Government Printing Office, 1927.

AN INTRODUCTION TO CLINICAL PERIMETRY. By H. M. Traquair, M.D., F.R.C.S., Assistant Ophthalmic Surgeon, Royal Infirmary, Edinburgh. Cloth. Price, $13.50. Pp. 264, with 165 illustrations. St. Louis: C. V. Mosby Company, 1927.

TECHNISCHE OPERATIONEN IN DER ORTHOPÄDIE (ORTHOKINETIK). Von Dr. med. Julius Fuchs, Facharzt für Orthopädie in Baden-Baden. Paper. Price, 16.50 marks. Pp. 230, with 126 illustrations. Berlin: Julius Springer, 1927.

FIFTH REPORT OF STATISTICIAN FOR THE YEAR ENDING JUNE 30, 1926. E. R. Amick, Statistician. State of Illinois, Department of Public Health. Cloth. Pp. 262. Springfield, 1927.

HISTOCHEMIE DER HAUT. Von Prof. P. G. Unna. Paper. Price, 20 marks. Pp. 163, with 69 illustrations. Leipsic: Franz Deuticke, 1928.

LA HISTERECTOMIA FÚNDICA (Tesis doctoral). Por J. Roura Rosés. Paper. Pp. 52, with 2 illustrations. Barcelona, 1927.

Medicolegal

Death from Physical Collapse Followed by Apoplexy

(Crews v. Moseley Bros. (Va.), 138 S. E. R. 494)

The Supreme Court of Appeals of Virginia, in affirming an order of the industrial commission dismissing a claim for the death of an employee, says that the sole question presented was: Is a physical collapse, followed by apoplexy and resulting in death eight days thereafter, an accident, within the meaning of the workmen's compensation law, which defines an accident as follows:

"Injury" and "personal injury" shall mean only injury by accident arising out of and in the course of the employment and shall not include a disease in any form, except where it results naturally and unavoidably from the accident.

The record disclosed that on Aug. 1, 1926, the employee was in his usual hale and hearty condition; that the work he was doing on that day was similar, if not practically identical, to that which he was accustomed to do (digging ditches and making excavations); that shortly after he left the ditch in which he had been working he lost consciousness and remained in that condition until death ensued. The record, however, failed to disclose that he was struck by any object, or sustained a fall, or overexerted himself, or that he suffered, in any manner whatever, a traumatic injury. In this state of the record the court does think that it could be said that he suffered such an accident as is contemplated by the Virginia statute. In other words, the court is unable to say that he came to his death as a result of an accident. The mere fact that he died of apoplexy was in no sense indicative of an accident. There must be shown a causal connection between the disease and the accident suffered. This burden the claimant failed to carry.

The court also says that, while the courts have differed in their definition of the word "accident," they have generally agreed that it should not be employed in too technical a sense.

Claims Originate with Disability and Not Sickness

(Davern v. Travelers' Equitable Ins. Co. (Minn.), 214 N. W. R. 468)

The Supreme Court of Minnesota, in affirming a judgment for the defendant in this action by an administratrix to recover sick benefits under a personal accident and health policy, says that the policy insured "against loss or disability" as therein defined, and that the disability for which recovery was here sought resulted from "confining sickness" contracted by the insured during the term of the policy. The insured, within the term of the policy, contracted a disease with which he was continuously afflicted until his death some months after the cancellation of the policy. That disease (what it was is not stated by the court), although incurable and fatal, did not result at first in disability. It was confining for a period of nine days from Nov. 28, 1922, a claim for which was paid by the defendant. Thereafter there was no disability and no confinement until after Feb. 14, 1923, on which date the defendant canceled the policy pursuant to a term thereof authorizing it so to do, but "without prejudice to any claim originating prior thereto." Such a provision is authorized by statute in Minnesota (section 3418, general statutes of 1923).

The question, then, was this: Given sickness contracted within the term of such a policy, can there be recovery for disability resulting from that sickness but beginning after cancellation? The argument for the plaintiff was that the indemnity provided, while measured by the resulting disability, was in fact indemnity for sickness contracted by the insured during the term of the policy. This court has given that argument attentive consideration, mindful that in case of real uncertainty the issue would have to be resolved for the insured under the familiar rule governing the interpretation of contracts of insurance. But, considering the whole contract, the court finds the conclusion irresistible that a claim thereunder originates not with the sickness but with

the resulting disability, if any. No indemnity was provided for sickness alone, however serious and even though fatal, the only obligation against the insurer arising in case of disability. The claim for indemnity, therefore, begins with, that is, originates with, the disability. Hence a cancellation is effective as against any claim for a disability beginning thereafter.

In health insurance, each disability furnishes a new ground for a claim. Successive periods of disability from the same disease give rise to separate claims. They have a common cause in the disease, but each, as a legal demand or "claim," originates with the onset of the disability.

Competence of Roentgen-Ray Witnesses and Testimony

(Dorr, Gray & Johnston v. Headstream (Ark.), 295 S. W. R. 16)

The Supreme Court of Arkansas, in affirming a judgment for $5,000 damages in favor of plaintiff Headstream, says that it was alleged that the defendants, partners engaged in the practice of medicine and surgery, while treating a small place on the plaintiff's left arm, diagnosed by them as eczema, applied the roentgen ray to the affected part, placing the machine within less than two inches of it, and negligently and unskilfully permitted the application of the roentgen rays to continue for thirty minutes, while out of the room, as a result of which the arm was seriously and permanently injured. Testimony introduced by the plaintiff tended to support the allegations of his complaint, whereas testimony introduced by the defendants tended to show skill and proper application of the roentgen-ray treatment to the affected part, resulting in a slight burn, which they could not prevent on account of the uncontrollable character of rays generated by the roentgen-ray machine, and the constitutional hypersensitiveness of the plaintiff to the roentgen ray. The jury found against the defendants on the disputed questions of fact, and, as there was sufficient testimony to support the verdict, this court cannot invade the exclusive province of the jury and determine where the weight of evidence lay; it can only review the record where any reversible errors were committed in the trial of the cause.

Error was assigned in allowing a certain witness to testify as an expert witness in the case. He did not qualify as a physician and surgeon, but testified that he was a graduate of a roentgen-ray school in Iowa and had taken courses in a school at Baltimore; that he had made between 17,000 and 20,000 exposures with roentgen-ray machines for diagnostic purposes but not as a therapeutic remedy; also that he was a graduate of a school of chiropractic. Roentgen-ray specialists who apply the roentgen ray to the human body as a therapeutic remedy, as well as for purposes of diagnosis, are not always graduate physicians. The roentgen ray is largely a scientific field unto itself, and any one who by study, observation and experience in that particular branch of science possesses knowledge and skill therein beyond that of persons of common knowledge is competent to testify as an expert witness. This court is committed to the doctrine that it is not necessary for one to be a physician in order to be a roentgen-ray specialist and entitle him to testify as an expert. From his study and experience, the witness in question was qualified to testify as to the amount of dosage it would take to burn the human body and whether the dosage was properly or whether negligently administered.

There was no error in permitting two expert witnesses (physicians) to testify that in their opinion it would be negligence for a roentgen-ray technician or practitioner to turn a roentgen ray of four milliamperes voltage on a patient for twenty or thirty minutes while absent from the room. The purpose for introducing expert testimony was to get the judgment or conclusion of the witnesses on facts assumed to be true. Expert witnesses could not answer a hypothetical question otherwise than by expressing an opinion or announcing a conclusion. This court can see no difference in saying that certain acts or omissions constitute negligence in the treatment of a disease and saying that the acts hypothetically detailed show improper treatment.

Objection was made to an instruction to the jury on the measure of damages because it covered damages arising from an ulcer which developed ten months after the roentgen-ray treatment. There was testimony in the record tending to show that the burn was the source or origin of the ulcer which resulted in damage to the arm. It was proper for the jury to render a verdict compensating the plaintiff for the injury to the arm if the burn was the proximate cause of the injury. This was a disputed fact for determination by the jury.

The trial court was correct in excluding the testimony of the defendant who administered the treatment in question to the effect that the roentgen-ray machine could be adjusted to the body and running without generating roentgen rays. This testimony was offered to rebut the evidence of the plaintiff that the defendant turned the machine on him for a period of twenty or thirty minutes and left the room during that time. He had testified in his direct and cross-examination that he administered the treatment for only five minutes by the watch and remained in the room during the entire time. The rebuttal testimony was in conflict with his original evidence and was not offered to show the actual condition that existed. It was not offered in the nature of an admission that he had left the room and that during his absence from the room the tube was lighted and the motor running, yet no roentgen rays were being generated. The rebuttal testimony was not responsive to the issue of negligence joined and a good-faith offer to change the defense. There was no error in excluding it.

Materiality in Law of Consultation with Physician

(Krauza et ux. v. Golden Seal Assur. Soc. (N. Y.), 223 N. Y. Supp. 143)

The Supreme Court of New York, appellate division, fourth department, in affirming a judgment in favor of the plaintiffs, on a benefit certificate, says that the cause of the death of the insured was acute pneumonic phthisis; the remote cause was pulmonary tuberculosis. The certificate contained a clause which stated that it was incontestable after the expiration of two years from the date thereof, except in cases of fraud or misstatement as to a material fact. The insured died eighteen months after the certificate was issued, but this action was begun more than two years after the date of the issuance of the certificate and the certificate was therefore incontestable, except as to fraud or misstatement as to a material fact. The defense was that the insured had, in his application for the certificate, made misrepresentation as to a material fact. Asked, "When did you last consult a physician, and for what?" he answered, "Never." To, "Give name and address of the physician who attended you," his answer was: "None." There was evidence that the acute condition which caused the death of the insured did not exist more than three months before his death. No proof was given as to the date of the onset of pulmonary tuberculosis, but the defendant's examiner at the time the application was made found no evidence of tuberculosis.

The applicant's consultation with a physician would be material as matter of law only if the consultation were for a physical condition which left some permanent weakness or indicated a predisposition to serious malady. If the consultation were for a temporary functional disorder, without permanent effect, it might not be a material fact, and might not reasonably be thought, by an applicant to whom such a question is put as was answered by the applicant here, to have been within the intent of the question. If the consultation was in respect to a condition other than mentioned, a misstatement denying such consultation would be material and constitute a sufficient defense to an action on the certificate.

In *Garrett* v. *Supreme Tribe of Ben Hur*, 219 N. Y. S. 345, which was relied on by the defendant, this court was dealing with a warranty, while here the statement, because of the clause mentioned above, was a representation, and materiality was a matter to be proved by the defendant, with the other elements of the defense. There was nothing in the record to indicate what the illness or abnormality was for which the insured consulted the two physicians who were called as witnesses, in the two months previous to making the application. This court cannot say, therefore, that the defendant established its defense of misrepresentation as to a material fact as matter of law.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in America for a period of three days. No foreign journals are available prior to 1921, nor domestic prior to 1923. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

34: 719-922 (Nov.) 1927

Ultraviolet Radiations: Measurement by Acetone Methylene Blue Method. C. H. Best and J. H. Ridout, Toronto.—p. 719.
*Seasonal Variation of Antirachitic Effect of Sunshine. F. F. Tisdall and A. Brown, Toronto.—p. 721.
*Antirachitic Effect of Skyshine. F. F. Tisdall and A. Brown, Toronto. —p. 737.
*Antirachitic Value of Sun's Rays Through Various Special Window Glasses. F. F. Tisdall and A. Brown, Toronto.—p. 742.
*Does Irradiation of Cod Liver Oil Increase Its Antirachitic Potency? E. T. Wyman and others, Boston.—p. 753.
*Epiphyseal Changes in Diagnosis of Scurvy. A. B. Schwartz, Milwaukee.—p. 765.
*Generalized Edema of Undetermined Etiology. W. L. Rost, New York. —p. 773.
*Phlyctenular Keratoconjunctivitis. H. Casparis, Nashville, Tenn.—p. 779.
Nontuberculous Fibrosis of Lungs. H. H. Perlman, Philadelphia.—p. 787.
Isolated Lymphoid Hyperplasia in Cecum and Appendix of Children. A. P. Stout, New York.—p. 797.
Physiologic Variations in Leukocytes in Infants and in Children. E. G. Fletcher and A. G. Mitchell, Cincinnati.—p. 807.
*Asthma in Children: VI. Comparative Study of Scratch and Intradermal Methods of Skin Testing. M. M. Peshkin and A. H. Fineman, New York.—p. 815.
*Parathyroid Therapy in Infantile Tetany. A. H. Gibson, Elkhart, Ind. —p. 835.
*Amato Bodies in Scarlet Fever. J. A. Toomey and J. A. Gammel, Cleveland.—p. 841.
Antirachitic Factor in Human and in Cow's Milk. A. F. Hess and M. Weinstock, New York.—p. 845.
*Spleen in Measles. E. Friedman, Denver.—p. 854.
Spontaneous and Induced Ketosis in Children: Effect on Glucose Tolerance Test. J. L. Kohn, M. E. Fries and G. Felshin, New York.—p. 857.
Feeding Care of Infant in Obstetric Nursery. F. C. Neff, Kansas City, Mo.—p. 870.
Technic of Teaching. J. L. Morse, Boston.—p. 877.

Seasonal Variation of Antirachitic Effect of Sunshine.—Tisdall and Brown state that the sun's rays during December, January and February in the latitude of Toronto have a slight but definite antirachitic effect on rats fed on a rachitogenic diet. A sharp increase occurs in the antirachitic effect of sunshine about the first of March. The antirachitic effect of sunshine in April and May is approximately eight times as great as in December, January and February. It would appear that the increase in the antirachitic effect of sunshine in March, April and May is due not so much to an increase in the amount of the ultraviolet rays of the length present in the sunshine in winter as to the presence of rays that are shorter than those found during the winter.

Antirachitic Effect of Skyshine.—The antirachitic effect of skyshine (reflected rays from the sky and clouds), according to observations made by Tisdall and Brown, is approximately from one half to two thirds as great as that produced by what is ordinarily termed sunshine (rays from the sun plus the reflected rays from the sky).

Antirachitic Value of Sun's Rays Through Special Window Glass.—The antirachitic effect of the sun's rays (including skyshine) through vitaglass, vioray glass and Corning special glass, Tisdall and Brown assert, is from 25 to 50 per cent of the antirachitic effect obtained without the use of glass. Obvious differences could not be detected in the efficacy of the three glasses. No antirachitic effect, or at the most a negligible effect, is produced by the sun's rays through ordinary glass. The antirachitic effect of skyshine through an ordinary window glazed with special glass (vioray) is slight —in fact, almost negligible—except immediately adjacent to the window. Similar results were obtained with rays through an open window covered with ordinary fly screen. In order to obtain much benefit from rays through an open window, or a window glazed with special glass, it is necessary to receive the direct rays of the sun. The use of special glass during the winter months is probably of little value. Its use in the latitude of Toronto is justified from about the first of March on, as the inclement spring weather prohibits the exposure of patients to the sun's rays, which at that time have a great antirachitic effect.

Value of Irradiation of Cod Liver Oil to Increase Antirachitic Potency.—On the basis of experimental results obtained by Wyman et al. there does not seem to be any adequate reason for the therapeutic treatment of cod liver oil by ultraviolet rays. Irradiation for thirty minutes of a cod liver oil potent in vitamins does not enhance its antirachitic potency, and irradiation for two hours noticeably decreases its antirachitic activity.

Epiphyseal Changes in Diagnosis of Scurvy.—Schwartz asserts that the state of the epiphysis not only has its immediate diagnostic importance, but also remains a telltale evidence of the bony changes for some time afterward. The epiphysis at the distal end of the femur presents a roentgenologic sign seen in no other condition. The previously rarefied epiphyseal body, with its distinctly outlined circumscribing ring, is seen in the later epiphyseal structure as a pale inset. Around this inset, the subsequent bony growth of normal density appears as a ringed contour. The greatest growth of new bone occurs laterally and toward the joint surface, the least growth on the side in apposition to the long bone. The coarsely dense structure of the later bony growth appears in such contrast to the washed out appearance of the previous epiphysis that the epiphyseal structure appears to have a double contour. This peculiar characteristic of the postscrobutic state apparently remains for many years.

Generalized Edema.—A case of generalized edema in a girl, aged 6, a careful study of which failed to demonstrate the etiology, is reported by Rost. The outstanding features in this case were: the persistence of the edema; the marked well being of the child; change in the ratio of the albumin to globulin in blood; the normal chemical reaction of the blood; the urine free from albumin and casts; the normal blood pressure, and the normal output of sodium chloride. The addition of sodium chloride did not cause an appreciable rise in weight.

Phlyctenular Keratoconjunctivitis.—Casparis is of the opinion that phlyctenular keratoconjunctivitis is in all probability a local manifestation of hypersensitiveness of the patient to tuberculin, and a tuberculous focus somewhere in the body is the underlying etiologic factor. This manifestation can readily be made to disappear by at least partially desensitizing the patient to tuberculin.

Asthma in Children.—Ninety-one children with asthma and nine with eczema, urticaria or angioneurotic edema, ranging in age from 8 months to 14 years, were tested by Peshkin and Fineman by the scratch and intradermal methods with thirty-three corresponding proteins. Thirty-eight children of the entire series reacted negatively with the scratch method. With the intradermal method, fifteen children gave negative reactions, and in twenty-three the reactions obtained were plus minus and one plus only. Sixty-two children reacted positively to the scratch method. With the intradermal method, twenty-six patients gave reactions not larger than one plus, and thirty-six gave two and three plus. No patients were encountered who gave definitely positive reactions with the intradermal method and negative reactions with the scratch method. The total number of negative reactions obtained with the scratch method were 3,032. The corresponding reactions with the intradermal method were definitely positive (++ and +++), in 0.53 per cent; one plus, in 4.15 per cent, and negative (— and ±), in 95.32 per cent. The total number of positive reactions (± to ++++) obtained with the scratch method was 233. The corresponding reactions with the intradermal method were definitely positive in 19.31 per cent; one plus in 27.47 per cent and negative in 53.22 per cent. Pseudoreactions or nonspecific reactions were common with the intradermal method. From the standpoint of safety and of the determination of etiologic sensitizations, the scratch method would appear to be superior as a routine procedure for testing. One method should not be employed to the exclusion of the other.

Parathyroid Therapy in Infantile Tetany.—Four cases of infantile tetany, in which parathyroid extract was used, are reported by Gibson. In three cases the rise in serum calcium and phosphorus was definitely related to the recovery from infection, as evidenced by the drop in temperature, and apparently was not related to the treatment with parathyroid extract. In one case, the temperature remained high, and the serum calcium and phosphorus values failed to rise on administration of parathyroid extract. This case was complicated by thymic enlargement, which was probably incidental.

Amato Bodies in Scarlet Fever.—Toomey and Gammel have studied 100 cases—fifty controls, and fifty cases of typical scarlet fever with reference to the presence of Amato bodies. Of the fifty patients, five died, four having had inclusion bodies. Two of the three patients with postpartum scarlet fever died, both having had numerous inclusion bodies. There were two cases of surgical scarlet fever, one presenting all the symptoms of scarlet fever. This was the case in the positive group, in which the greatest number of inclusion bodies was seen. The other showed a typical rash, but no sore throat or glandular enlargement, and no inclusion bodies. Three of the patients had an extremely mild type of the disease, and the presence of Amato bodies was doubtful. In the control series, nine of the fifty patients examined had Amato bodies present in the blood. These nine positive control cases included two cases of measles, three of diphtheria, one of tuberculous pneumonia, one of stricture fever, one of pneumonia, and one of epidemic meningitis, the latter presenting the most Amato bodies seen in either the positive or the negative group.

Spleen in Measles.—In 116 cases of measles, enlargement of the spleen was found by Friedman in fourteen, or 12 per cent. In four cases, this enlargement was so slight as to have easily escaped detection under ordinary circumstances. Hypertrophy was present in only one female. Not one of the more seriously sick children or of those with the ordinary complications showed an enlarged spleen. The enlargement was more pronounced in the younger children. The degree of enlargement was independent of the stage of eruption. The frequency of enlarged spleens was almost as great during the early stage as during the height of the eruption. The conclusion appears warranted that an enlarged spleen is not a prominent nor a frequent occurrence in measles at any stage of its development.

Annals of Internal Medicine, Ann Arbor, Mich.

1: 53-122 (Aug.) 1927

*Functional Tests of Liver. G. B. Eusterman, Rochester, Minn.—p. 53.
*Results of Liver Function Tests. E. L. Sherrer, Cleveland.—p. 63.
Urobilin Physiology and Pathology. P. D. McMaster and R. Elman, New York.—p. 68.
Clinical Significance of Jaundice. M. A. Blankenhorn, Cleveland.—p. 74.
Differential Diagnosis of Gallbladder Disease. M. E. Rehfuss, Philadelphia.—p. 80.
Roentgenographic Aspects of Differential Diagnosis of Disease of Gallbladder. B. H. Nichols, Cleveland.—p. 92.
*Effects of Sodium Tetraiodophenolphthalein on Vital Organs. C. K. Hsieh, Peking, China.—p. 96.
*Cholecystography: So-Called Danger in Use of Tetraiodophenolphthalein. M. Feldman, Baltimore.—p. 108.

Functional Tests of Liver.—In the last analysis, says Eusterman, a proper differential diagnosis depends mainly on time-honored clinical methods, including a complete history, showing the appearance of the symptoms in chronological order and emphasizing the more important episodes, and a systematic physical examination. In addition, the routine examinations of the urine and blood are necessary, together with the determination of the coagulation time and fragility tests.

Comparison of Liver Function Tests.—Sherrer summarizes his views as follows: The levulose tolerance test is of slight value in the study of liver diseases. The bromsulphthalein dye test is of distinct value in the diagnosis of liver disturbance, especially in the absence of jaundice. The van den Bergh reaction is valuable in the differential diagnosis of conditions in which icterus is present and in following the course of the disease in such cases.

Effect of Sodium Tetraiodophenolphthalein on Vital Organs.—The effect of sodium tetraiodophenolphthalein on some vital organs was studied by Hsieh in regard to changes in time and in dosage. Thirty-one dogs were given the dye either orally or intravenously, and three dogs were taken as controls. Either orally or intravenously, small doses of from 3.3 to 16.0 grains per 10 pounds gave only congestion with such slight fatty changes in some cases that the effect could be considered to be within normal limits. Therefore it is safe to conclude that the ordinary human dose of sodium tetraiodophenolphthalein as used in the Graham test is under the toxic limit. With the larger doses, marked degenerative changes were observed in the liver, spleen, kidney and heart; fatty degenerative infiltration was the most conspicuous change in all cases, and this seemed to be the forerunner of actual necrosis. Extensive necrosis was present in one case. In view, therefore, of these very marked toxic effects with overdosage, great caution should be taken in the administration of this iodophenolphthalein or similar compounds. With small doses, both the oral and the intravenous methods of administration of the dye are safe, and their effects on the body tissues are apparently about the same in degree. But with overdoses, intravenous injection of the dye produces much more extensive injury and in a shorter time. So in using the intravenous method, still greater care should be taken.

So-Called Dangers of Cholecystography.—As the result of a collective investigation made by Feldman in 18,000 cases in which cholecystography was performed, the dye being administered by the oral route, the results uniformly indicate that this method is free from all danger; furthermore, there has been no evidence presented to indicate that any degenerative changes have been produced in the liver or kidneys by this procedure. The conclusions have been fully confirmed by the experimental effects on animals.

Boston Medical and Surgical Journal

197: 955-1016 (Nov. 24) 1927

Five Cases of Spontaneous Rupture of Heart. E. A. Locke, Boston.—p. 955.
*Relation of Infections of Upper Respiratory Tract to Chronic and Subacute Infections of Lungs. J. B. Hawes, 2nd., Boston.—p. 961.
Local Variations in Cancer Mortality. L. Eaves, Boston.—p. 964.
*Plaster Spica Useful in Convalescent Treatment of Fractures of Femur. A. Thorndike, Jr., Boston.—p. 978.
Pathogenesis of Chronic Bronchitis: Treatment with Quinine Derivatives. G. P. Grabfield, Boston.—p. 979.
Historical Reference (1635) to Use of Liver in Treatment of Disease. L. C. Strong, Ann Arbor, Mich.—p. 981.
*Spontaneous Amputation of Appendix. R. J. Kirkwood, Jr., South Boston.—p. 982.

Upper Respiratory Tract Infections and Lung Infections.—Hawes calls attention to the fact that many symptoms related to the lungs, such as cough and pain in the chest, have their origin in infections higher up, in the region of the nose and throat, and likewise that many cases of bona fide disease of the lungs, such as bronchiectasis or tuberculosis are kept active and their symptoms aggravated by such infections of the upper respiratory tract. He analyzes 156 cases.

Plaster Spica for Fractured Femurs.—The plaster spica described by Thorndike was first used in the Maria Hospital, Stockholm, Sweden. The apparatus is applied with the hip and knee each in 90 degrees flexion. First, a firm coaptation plaster is applied to the whole thigh; then a plaster gutter, extending from the ischial tuberosity to the tip of the toes, is made and fitted; finally, a supporting rope is run from the midportion of the gutter on the lower leg to the posterior aspect of the plaster coaptation of the thigh. The spica is then completed from the lower costal margin to the knee and, when set, the apparatus is complete. The use of a stocking fastened with broad adhesive plaster to the skin of the lower leg, and to the toe of which a tape is sewed (the tape being run overhead through the pulleys of a Balkan or Rainbow frame to the hand of the patient), makes simple the early stages of inception of passive motion.

Spontaneous Amputation of Appendix.—Kirkwood's patient was admitted to the hospital with a diagnosis of chronic appendicitis. For several years she had been subject to occasional attacks of pain in the right lower abdominal quadrant, never very severe. One month prior to entry she had had an attack more severe than any before, which neces-

sitated her staying at home. At operation, the appendix could not be located at first. On closer inspection of the base of the cecum, the three teniae were seen to converge smoothly. Further digital examination of the right lower quadrant delivered an appendix 2 cm. long, entirely free from any connection with the cecum. The microscopic report on the specimen indicated chronic and healing appendicitis.

Florida Medical Association Journal, Jacksonville

14: 159-206 (Oct.) 1927

Surgery of Male Perineum. A. R. Knauf, Tampa.—p. 175.
Bismuth as Antisyphilitic Medicament. M. M. Coplan and R. J. Holmes, Miami.—p. 178.
Ectopic Pregnancy. B. T. Prather, St. Petersburg.—p. 182.
*Liver Extract in Hypertension. M. J. Flipse, Miami.—p. 185.
Acute Abdomen from Standpoint of General Practitioner. E. Long, Madison.—p. 188.

Liver Extract in Hypertension.—Flinse has treated more than thirty cases of hypertension with liver extract, 1 cc. daily, injected subcutaneously, usually for four days only. In some cases, 2 or 3 cc. was given at intervals for many months. The extract proved effective in all cases, even in many in which nitrites and related vasodilators failed to reduce the blood pressure.

Iowa State Medical Society Journal, Des Moines

17: 385-426 (Nov.) 1927

Heart Disease. J. S. Gaumer, Fairfield.—p. 385.
Id.: Study of 1,000 Consecutive Patients. M. M. Myers, Des Moines.—p. 388.
Treatment of Cardiac Failure. V. C. Graber, Iowa City.—p. 394.
Infections of Maxillary Sinuses. J. B. Naftzer, Sioux City.—p. 401.
What Are We Doing with Cervical Carcinoma? K. L. Johnston, Oskaloosa.—p. 405.
Prevalence of Communicable Diseases with Forecasts as to Their Probable Developments. H. Albert, Des Moines.—p. 411.
*Malta Fever in Iowa. A. V. Hardy, C. S. Linton and T. M. DeCapito, Iowa City.—p. 414.

Malta Fever in Iowa.—In four months, the blood from nineteen patients was found to agglutinate *Brucella melitensis*. In twelve cases, confirmatory tests have been done, and the titer on both examinations was 1:160 or higher. These may be accepted as proved cases of malta fever. the blood of three others gave an agglutination titer sufficiently high to be diagnostic, but only one examination was done. These should be accepted as probable cases of malta fever. The remaining four gave agglutination in a titer of less than 1:80. Only two of these were confirmed by a repeated examination. Hardy et al. urge that a careful study be made, as the disease apparently is quite prevalent in Iowa.

Journal of Industrial Hygiene, Baltimore

9: 475-502 (Nov.) 1927

*Trend of Occupational Mortality in United States. F. G. Pedley, New York.—p. 475.
*Pulmonary Asbestosis. T. Oliver, Newcastle-on-Tyne, England.—p. 483.
Case of Injury to Skin and Eyes by Liquid Sulphur Dioxide. B. R. Kennon, Norfolk, Va.—p. 486.
Health Hazards in Cotton Industry. W. F. Dearden, Manchester, England.—p. 488. Concluded.

Trend of Occupational Mortality.—It is evident from a study of Pedley's figures that the conception of industrial mortality must change somewhat. The prevailing idea that tuberculosis is still the leading cause of death among industrial workers, whereas it has taken third or fourth place as a cause of death in the general population, is apparently incorrect. Tuberculosis is still excessive in industry as compared with the country as a whole, but it is now surpassed in importance by cardiac diseases. No longer is tuberculosis the "captain of the men of death." This study does not support the idea that the increase in cancer is due to increasing industrialization. Indeed, the relative proportion of cancer among occupied persons is actually less than among the unoccupied. The increase in proportionate mortality from cancer among occupied persons is no greater than that among the general population. The reason for the increase in proportionate mortality from heart disease is due not so much to an actual increase in deaths from the disease as to a decrease in death from other diseases, chiefly tuberculosis. The death rate from heart disease has increased somewhat in the general population but not to the extent suggested by the increase in proportionate mortality. Apoplexy and paralysis and the chronic diseases of the kidneys show very little change in their proportionate mortality among occupied persons in the last decade, nor do they show much change in the general population.

Pulmonary Asbestosis.—Pulmonary asbestosis resembles silicosis of the lungs in the pronounced shortness of breath on slight exertion, in the deficient respiratory capacity, in physical debility and, on examination of the sputum in cases not too far advanced, in the absence of tubercle bacilli. However, since fibrotic changes are taking place in the lungs of both patients, the possibility has to be considered of the development, if such has not already taken place, of pulmonary tuberculosis. The clinical picture of pulmonary asbestosis differs slightly from that presented by a patient who is the subject of ordinary tuberculosis of the lungs, so far as there is a noticeable darkening of the skin varying from mild bronzing to slight blueness, a degree of shortness of breath in excess of the physical signs, a greater amount of general disability, little expectoration, and the comparative absence of night sweats.

Journal of Infectious Diseases, Chicago

41: 329-404 (Nov.) 1927

*Bacillus Sordellii, Cause of Malignant Edema in Man. I. C. Hall and J. P. Scott.
*Comparison of Reactions to Dermovaccine and to Neurovaccine for Smallpox. S. Thomas, Bethlehem, Pa.—p. 336.
Optochin-Fastness of Pneumococci. C. W. Jungeblut, Albany, N. Y.—p. 345.
Bacteria Concerned in Spoilage of Haddock: II. Organism Resembling B. Vulgatus. A. H. Gee, New Haven, Conn.—p. 355.
*Transmissible Lysis of Thermophilic Organism. S. A. Koser, Urbana, Ill.—p. 365.
*Incidence of Scarlet Fever Streptococci in Throats of Diphtheria Patients. P. S. Rhoads, Chicago.—p. 377.
Preparation of Salmonella Pullorum Antigens for Complement Fixation Tests. L. D. Bushnell and C. B. Hudson, Manhattan, Kan.—p. 383.
Complement Fixation and Agglutination Tests for Salmonella Pullorum Infection. L. D. Bushnell and C. B. Hudson, Manhattan, Kan.—p. 388.
Incidence of Carriers of B. Aertrycke (B. Pestis Caviae) and B. Enteritidis in Wild Rats of San Francisco. K. F. Meyer and K. Matsumura, San Francisco.—p. 395.

Bacillus Sordellii, Cause of Malignant Edema.—Hall and Scott confirm Sordelli's discovery of a new putrefactive pathogenic anaerobe in human gangrenous infections, which combines the virulent properties of *B. novyi* with the principal morphologic and cultural properties of *B. sporogenes*. The binomial *Bacillus sordellii* is suggested as a more appropriate and less confusing name than *B. edematis-sporogenes* which Sordelli used.

Comparison of Dermovaccine and Neurovaccine for Smallpox.—In the 100 cases studied by Thomas, all reactions—immune, vaccinoid, and vaccinial—obtained with neurovaccine, were milder than the corresponding reactions with the ordinary dermovaccine. In no case did a hemorrhagic pustule result, and in every instance of pustulated accelerated reaction or vaccinia, a clean, hard, nonitching scab formed quickly with almost no surrounding erythema. On revaccination with a high potency dermovirus, men vaccinated five months before with the neurovirus did not show so high a degree of protection against the dermovirus as men who had previously (five months) been vaccinated with dermovirus. These men did, however, show considerably more immunity than men who had not been vaccinated within three years. Definite conclusions regarding the efficacy of neurovaccine do not yet seem justified.

Scarlet Fever Streptococci in Throats of Diphtheria Patients.—Cultures of hemolytic streptococci were taken by Rhoads from the throats or noses of twenty-nine of a series of 100 patients who were admitted with the diagnosis of diphtheria to hospitals for contagious disease. Sixteen, or 55.2 per cent, of these strains of hemolytic streptococci were identified as scarlet fever streptococci by the toxin neutralization method. The strength of the scarlatinal toxin produced by these strains varied from 100 to 10,000 skin test doses per cubic centimeter. The strength was less than 2,000 skin test doses per cubic centimeter in fourteen of the sixteen strains. Thirteen, or 44.8 per cent, of the strains of hemolytic streptococci isolated did not produce any demonstrable scarlet fever toxin.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Journal of Oriental Medicine, Dairen, S. Manchuria

7: 7-66 (Sept.) 1927

*Nutritive Value of Dried Milk as Food for Infants. T. Suzuki.—p. 7.
Conditions Governing Perspiration in Man. Y. Kuno.—p. 39.
Biologic Significance of Lipoid. R. Kawamura.—p. 42.
Disturbances of Water Balance. T. Kato.—p. 45.
Automatic Movement of Heart. M. Ishihara.—p. 49.
Growth Requirements of Bordet-Gengou Bacillus. T. Hayakawa and S. Inamori.—p. 52.
Pathogenesis of Hemorrhagic Form of Smallpox. S. Hoshizaki and J. Moriwaki.—p. 54.
Toxins of Hemolytic Streptococci: II. Neutralization Tests with Antitoxic Serums. K. Kurauchi.—p. 55.
*Resistance of Tubercle Bacilli to Cold. E. Homma and L. K. Koida.—p. 56.
Resistance of Tubercle Bacilli to "Sake." E. Homma and L. K. Koida.—p. 59.
Dermoid Cyst in Bladder. T. Murata.—p. 61.
Roentgen-Ray Diagnosis of Pregnancy. T. Miyata and J. Hoshina.—p. 63.
Resistance of Leukocytes in Internal Diseases. K. Suno.—p. 64.
Effect of Inhalation of Various Aromatics on Leukocyte Picture. R. Yoshida.—p. 66.
Effect of Metallic Salts on Blood Sugar. L. Tkachenko.—p. 66.

Nutritive Value of Dried Milk.—From his clinical studies and experiments, Suzuki concludes that dextrin-malted milks, in their present composition, are not adequate foods in that the infant shows symptoms of dyspepsia and does not gain satisfactorily in weight. These indictments are applicable not only to very young infants but to the older ones as well. On the contrary, dried milks are quite adequate in that the gain is satisfactory in each case, and there are no symptoms of dyspepsia.

Normal and Abnormal Perspiring.—With regard to their ability to perspire, Kuno divides people into three categories: (1) Those who have little ability to perspire, so that they barely sweat under a very high atmospheric temperature, and consequently easily accumulate heat in their bodies; (2) those who sweat in accordance with the necessities of the regulation of body temperature; and (3) those who are always liable to sweat. Their sweat secretion is purposeless from the point of view of heat regulation, or it goes much beyond the necessary amount. Those in the second group are normal. Those in the first group should not reside in tropical countries nor should they engage in any heavy manual labor. The state of the third group may be a sign of some abnormal conditions. Normal people pass into this state when they are suffering from some illness. This sign seems to have a wide application for diagnostic purposes.

Effect of Cold on Tubercle Bacillus.—Homma and Koida failed to note any deleterious effect of cold on the tubercle bacillus even when it was exposed to zero centigrade for more than 200 hours. The culture medium was frozen solid, but the bacillus was not harmed in the least.

Lancet, London

2: 1003-1058 (Nov. 12) 1927

Medicine and Church. F. Buzzard.—p. 1003.
Laryngectomy for Cancer of Larynx. L. Colledge.—p. 1008.
*Rate of Movement in Postencephalitic Parkinsonism. A. J. Hall.—p. 1009.
Silent Gap in Auscultatory Estimations of Blood Pressure. P. C. Gibson.—p. 1012.
*Results of Suprapubic Prostatectomy. D. S. Davies and F. M. Loughnane.—p. 1014.
Meningeal Endothelioma of Interpeduncular Space Simulating Pituitary Tumor. C. D. Shapland.—p. 1019.
Ruptured Malarial Spleen: Splenectomy: Recovery. D. L. Tate.—p. 1020.
*Double Lesions of Stomach and Duodenum. G. Vilvandré.—p. 1020.

Rate of Movement in Parkinson's Disease.—Seventy-three patients with Parkinson's disease have been tested by Hall as to the rate of muscle movements. Definite slowness of movement was found in an arm which did not show any other abnormal signs. The difference in the rate of the two arms was usually not much greater than may be found in normal persons. Belladonna and scopolamine, if effective at all, usually acted in almost the same degree on the two arms. In all but the advanced degrees of slowness, there was little or no abnormal flagging. All these facts taken together support the view that the primary seat of diminished rate of movement does not lie in the peripheral motor apparatus, and that it is, therefore, probably in the central nervous system. This is the primary factor in causing slowness of movement; other factors are secondary.

Results of Suprapubic Prostatectomy.—Of the nineteen patients examined by Davies and Loughnane with the urethroscope, only two still showed total absence of the prostate. In all other cases one or both lobes were present, sometimes normal, sometimes increased in size. In one case there was some definite degree of obstruction. In the greater percentage of cases, the prostate reappeared after suprapubic prostatectomy. This lends support to the view that hypertrophy of the prostate is really peri-urethral in origin.

Double Lesions of Stomach and Duodenum.—The presence of two ulcers in the same patient, one gastric and one duodenal, is reported by Vilvandré. Judging from the onset of symptoms, the gastric ulcer had, in all probability, been present from ten to twelve years, during which time the patient had been treated for "indigestion," and the duodenal lesion had been active about four years.

Revue Neurologique, Paris

34: 337-432 (Oct.) 1927

Special Form of Acute Ataxia. G. Marinesco.—p. 337.
Technic of Encephalography. V. K. Choroschko.—p. 352.
Pineal Gland in Normal Mammals and in Those with Brain Injuries. V. Desogus.—p. 362.
*New Pathologic Reflex: Painful Toe. J. B. Grossman.—p. 370.
*Vegetative Syndrome. P. Saradjichvili.—p. 373.

New Pathologic Reflex: Painful Toe.—The "painful toe" reflex is elicited as follows: when one presses with the index finger and the thumb on the ungual phalanges of the patient, beginning with the little toe and proceeding to the second, a forceful extension of the great toe is produced; pressure on this latter produces flexure of the other toes with a fan shape separation. This phenomenon is observed only in organic diseases of the nervous system as a result of alteration (degeneration) of the lateral pyramidal tract, and it is constant. It appears earlier and disappears later than the Babinski sign.

Vegetative Syndrome.—The patient whose case is reported had had typhus, complicated by acute parotitis of the right side, for which an operation was performed. The cicatrice extended the length of the ramus ascendens mandibularis. Two or three weeks after operation, the patient noticed that the right cheek (especially the superior posterior portion) and the ear became red when he ate. At the same time, he felt hot and drops of perspiration rolled down his cheek. If he went through the motions of chewing without food in his mouth, these effects were not produced. Examination revealed a slight hyperesthesia of the region above the ear as far as the temple. The region was slightly reddened and felt warmer and the hair was noticeably thinner. Saradjichvili makes the following interpretation of these clinical facts: After alteration of the sympathetic branch, the parasympathetic branch predominates; but it only acts after having received the irritation specific for it, in the present case, taste.

Igiene Moderna, Genoa

20: 261-292 (Sept.) 1927

*Typhoid Vaccine. N. Bruni.—p. 261.
Water Chlorination. F. Pulgher.—p. 266. C'cn.
Avitaminoses. M. Capocaccia.—p. 285. C'cn.

New Typhoid Vaccine.—The Italian army has adopted a typhoid lipovaccine. The excipient is a vegetable oil. The change has done away with abscesses and other complications observed after the use of the old petrolatum vaccine. Only very slight reactions occurred in about 30,000 soldiers vaccinated. In 100 of the group, the size of the spleen was determined after vaccination; in about half a moderate swelling was detected. Most of those vaccinated develop agglutinins of a rather high titer (1:320) after eight days. These agglutinins usually disappear in about two months. The agglutinin titer is lowest for paratyphoid A. In some human beings the complement fixation test becomes positive. In rabbits blood serum neither agglutinates nor deviates the complement after one injection of vaccine. In persons with abscesses or negative agglutination after injection, revaccination should be tried.

Siglo Médico, Madrid

80: 341-364 (Oct. 8) 1927

Schizophrenia. A. Vallejo Nágera.—p. 341.
*Endoscopy. E. Escomel.—p. 349.

Simplifying Endoscopy for General Practitioners. — By merely blackening temporarily the bell of the device, discarding all intratubular lamps and substituting a head light, urethroscopy and all kinds of endoscopy become far easier for the average physician, according to Escomel.

Beiträge zur klinischen Chirurgie, Berlin

141: 1-192, 1927

Grouping of Streptococci According to Virulence. H. Dold and A. Hendriock.—p. 1.
Tuberculosis of Mesenteric Lymph Nodes Resembling Appendicitis. K. Bagg.—p. 23.
Dialysis Through Peritoneum. H. Heusser and H. Werder.—p. 38.
Insufficiency of Ureterovesical Opening. A. Schmidt.—p. 50.
Subcutaneous Injury to Intra-Abdominal Organs. H. Koch.—p. 69.
*Roentgen-Ray Therapy of Sarcoma. P. Rostock.—p. 81.
Plexiform Neuroma of Omentum and of Mesentery. E. Polacco.—p. 102.
Loose Bodies in Joints. H. Schum.—p. 111.
*Influence of Paravertebral Anesthesia on Kidney Function. O. Wiedhopf.—p. 171.
Blood Transfusion in Acholia. A. S. Maximowitsch.—p. 186.

Effect of Roentgen-Ray Therapy on Sarcoma.—Rostock analyzes 142 cases of sarcoma of various types, treated at the Jena clinic from 1919 to 1925. Roentgen rays applied alone cured 8.6 per cent; used with incomplete operation, they cured 10.5 per cent. Combination of radical removal of the tumor with irradiation resulted in 37 per cent of cures. However, the fairly good results obtained in the last group are accounted for by the wide excision of the growth. The effect of the roentgen-ray therapy is best studied in the first two groups. The duration of the cures was from two to seven years. Occasionally, a striking effect was noted, tumor masses rapidly disappearing. Metastases, however, appeared after a relatively short time, and these were refractory to further treatment. Not infrequently tumor masses proliferated rapidly in spite of intensive irradiation. The author concludes that in every case of sarcoma an attempt should be made to excise as widely as possible, no matter how mutilating the operation proves to be. Inoperable cases should be given the benefit of roentgen-ray therapy. He agrees with the conclusion of Jüngling, that a permanent cure of sarcoma by roentgen rays rarely takes place.

Influence of Paravertebral Anesthesia on Kidney Function.—Läwen has demonstrated that blocking of the so-called kidney segments, the twelfth dorsal and first lumbar, relieves the oliguria and anuria of prostatectomized patients. In speculating on the modus operandi of this procedure, Wiedhopf suggests four possibilities, interruption of the reflex arc, relief of vessel spasm through paralysis of vasomotor fibers, paralysis of the hypothetic "secretory" nerves of the kidney, and lastly, a nonspecific irritant action. In three dogs the ureters were exteriorized and the effects of anesthesia of the last two dorsal and the first lumbar segments were noted. There was a definite increase in the amount of urine. The total sodium chloride content was also increased. The diuretic effect was noted within fifteen minutes. By blocking the rami communicantes, paravertebral anesthesia accomplishes the same effect as splanchnic anesthesia. Clinical application of this method can be of value only in cases in which a sufficient amount of functioning parenchyma exists. In uremia of the sclerotic kidney it would be of no value.

Deutsche Zeitschrift für Chirurgie, Leipzig

206: 1-220 (Oct.) 1927

Rôle of Stellate Ganglia in Regulation of Heat. E. Enderlen and H. Gessler.—p. 1.
*Results of Denervation of Heart. E. Enderlen and Eismayer.—p. 5.
Presence of Trypsin in Internal and External Strangulation. Traum.—p. 8.
*Aseptic Bone Necrosis. E. Bergmann.—p. 12.
Results with Pseudarthrosis in Leipzig Clinic. Osman.—p. 88.
Pathogenesis of Osteochondritis Dissecans. J. Heine.—p. 119.
Operation for Habitual Dislocation of Shoulder. J. Fessler.—p. 132.
Fracture of Cuneiform Bone. O. Eilers.—p. 141.
Experiments in Muscle Contraction. W. Fick.—p. 157.

Results of Denervation of the Heart.—The authors studied the effect of epinephrine, atropine and ergotamine tartrate on the denervated heart in dogs. The pharmacologic effect of these was lost for a short time in some of the experiments. It soon returned, however, and did not in any way differ from the effect on a normal heart. These experiments are in accord with the well known views of Langley that organs with autonomic innervation continue to be influenced by sympathicodynamic substances even after complete denervation.

Aseptic Bone Necrosis.—Bergmann discusses that group of bone and joint diseases caused by nutritive disturbances. It includes osteochondritis deformans juvenilis coxae or Perthes' disease, Kienböck's "malacia" of the semilunar bone, and Schlatter's disease of the tuberosity of the tibia. They are all, in Bergmann's opinion, cases of epiphysitis. Perthes' disease is caused by aseptic necrosis of the upper epiphysis of the femur, as has been abundantly proved by histologic studies of operative material. The exact cause of the necrosis is not clear. Neither trauma nor embolic occlusion of nutrient blood vessels entirely explain the process. Congenital and extraneous causes may contribute to the weakening of the coxofemoral border. It is quite likely that only partial necrosis takes place, for restitution to normal is not unusual. Perthes' disease is not to be confused with juvenile arthritis deformans.

Jahrbuch für Kinderheilkunde, Berlin

117: 257-376 (Oct.) 1927

*Apparent Familial Infantile Pernicious Anemia. G. Fanconi.—p. 257.
*Milkless and Milk-Poor Feeding of Infants. B. Epstein.—p. 281.
*School Endemic of Erythem. Nodosum. A. Wallgren.—p. 313.
Onanism in Infants. E. Faerber and T. Demetriades.—p. 329.
Nonspecific Choroiditis in Spasmodic Affections. M. Lederer.—p. 339.
*Herpes Zoster and Coincident Varicella. K. Scheer.—p. 343.
Color Perception of Infants. A. Peiper.—p. 350.

Apparent Familial Infantile Pernicious Anemia. — Seven cases are reported by Fanconi in support of the belief that an inherited abnormal constitution bears a causal relationship to pernicious anemia. Three of the children died. Their blood picture was typical of pernicious anemia, but there was no evidence of increased hemolysis. In spite of a microcephaly, the boys' intelligence was good. Other anomalies present were: hypoplasia of testes, convergent strabismus, markedly increased tendon reflexes and intense pigmentation of the skin. One child that recovered had progressive muscular distrophy, microcephaly, hypoplasia of testes, deep pigmentation of the skin and a blood picture typical of pernicious anemia.

Milkless and Milk-Poor Feeding of Infants.—Epstein asserts that meat, especially in the form of a meat pudding, is not unsuited for feeding infants. He used calves' and pigs' brains, calves', beef and lambs' liver and thymus made into a sort of soup. Such feedings are not, however, begun until after the sixth month, usually not until the ninth month. The value of the brain and liver feedings is said to be their fat content; this with the albumin content of the thymus increases the calory value from 30 to 100 per cent over that of mother's milk. The diet gives very good results when used as a partial substitute for milk. Cases are cited.

School Endemic of Erythema Nodosum.—The eighteen cases of erythema nodosum reported by Wallgren all gave a one to three plus positive Pirquet reaction. They occurred in a class of thirty-two children. One of these, recently admitted, had well developed pulmonary tuberculosis. Three others were also tuberculous. After the second month of the first child's attendance in school, seventeen children showed signs of the infection, twelve presenting erythema nodosum and six fever but no lung symptoms. Two months later all gave a positive Pirquet reaction; thirteen had a pulmonary lymph gland tuberculosis and four presented hilum lesions suggestive of tuberculosis.

Herpes Zoster and Coincident Varicella.—A brother and sister developed, simultaneously, one zoster and the other varicella. Fourteen days later, the first mentioned developed varicella, therefore Scheer assumes that the conception that the one protects against the other is not tenable.

Münchener medizinische Wochenschrift, Munich

74: 1651-1696 (Sept. 30) 1927

Clinical Observation in Allergy. H. Kämmerer and A. Apaza-Fuentes.—p. 1651.
Concentration of Aromatics in Serum and Urine of Persons with Normal and Diseased Kidneys. E. Becher, S. Litzner and F. Doenecke.—p. 1656.
Comparison of Action of Most Important Opium Derivatives. R. F. Mayer.—p. 1657.
*Operative Treatment of Unilateral Paralysis of Recurrent Laryngeal Nerve Following Goiter Operation. M. Grasmann.—p. 1660.
Traumatic Appendicitis. Steinthal.—p. 1660.
*Fatal Postoperative Embolism of Lung. J. Oehler.—p. 1662.
Analysis of Failure of Gastro-Enterostomy. W. Haas.—p. 1664.
Physical Exercises and Nervous System. T. Wohlfeil.—p. 1665.
Magnesium Hydroxide as Antidote for Arsenic Poisoning. M. A. Rakusin.—p. 1667.
Swamp Fever. W. Schemensky.—p. 1668.
Significance of Encephalitis in Psychiatry. A. Bostroem.—p. 1668.
*Rare Form of Gangrene of Fingers. W. Tönnis.—p. 1671.
Etiology and Pathogenesis of Nontuberculous Spontaneous Pneumothorax. C. Friesdorf.—p. 1672.
Transportable Redresseur and Osteoclast. W. Engelhard.—p. 1674.

Operative Treatment of Unilateral Paralysis of Recurrent Laryngeal Nerve Following Goiter Operation.—Grasmann favors two procedures: the Payr and the Schmerz. The latter operation can be performed more easily than the former, and the anatomic and functional results are apt to be better. One case is cited in which the result seven years after operation was wholly satisfactory.

Fatal Postoperative Embolism of Lung.—Oehler reports on ten cases of fatal pulmonary embolism occurring in 1,873 operations, 975 of these being laparotomies. Six of the cases reported occurred in this group. This unusually large number of cases of pulmonary embolism is ascribed to the intravenous injection of a calcium preparation at the conclusion of the operation for the purpose of reducing the incidence of postoperative pneumonia.

Rare Form of Gangrene of Fingers.—The patient, aged 53, had an inoperable carcinoma of the stomach and an inguinal hernia. A herniotomy was done. A few hours later both hands were deeply cyanosed, but both pulses were normal. The cyanosis temporarily gave way to a blanching and eventually one hand became normal. On the other hand, gangrene developed in the joints of three fingers and amputation was done. Tönnis likens this condition to Raynaud's disease.

Seuchenbekämpfung—Infektionskrankheiten, Vienna

4: 195-274, 1927

*Vaccination Against Smallpox with Neurovaccine of Levaditi. E. Gallardo.—p. 195.
Decentralization of Rabies Vaccinations. H. B. Palawandow and B. G. Weinberg.—p. 197.
*Work of Rabies Division of Hygienic Institute of Novi-Sad (Jugoslavia). A. Hempt.—p. 204.
Phenolated Rabies Vaccine. V. Puntoni.—p. 210.
Asthma and Tuberculosis in Relation to Climate Allergens. S. van Leeuwen.—p. 212.
Relation of Reticulo-Endothelial System to Antibody Formation and to Healing Processes in Sepsis. P. Saxl.—p. 230.
Organotherapy in Gynecology and Obstetrics. O. O. Fellner.—p. 235.
Epidemiology of Paratyphoid. W. Fischer and E. Glaser.—p. 244.
Typhoid in Lower Austria During Post-War Period. F. Weinfurter.—p. 251.

Vaccination Against Smallpox with Neurovaccine of Levaditi.—Gallardo reports that good results have followed the prophylactic use of Levaditi's neurovaccine against smallpox. Of 20,365 vaccinations, 91 per cent were positive. On revaccination, more than seven years after the previous vaccination, 58.6 per cent were positive. Among 227,000 vaccinations reported by others who used this vaccine, 90 per cent of first vaccinations and 50 per cent of revaccinations were positive.

Work of Rabies Division of Hygienic Institute of Novi-Sad (Jugoslavia).—The mortality among 3,059 persons who had been bitten by dogs and were then treated with antirabic virus was 0.13 per cent, or four deaths. The treatment extends over a period of from three to six days. The dose ranges between 1.6 and 2.5 Gm. depending on the severity of the case. The administration is by hypodermic injection into the abdominal walls.

Strahlentherapie, Berlin

26: 657-822, 1927

Treatment of Skin Diseases by Means of Bucky's "Grenz" (Infra-Roentgen) Rays. H. Fuhs.—p. 657.
*Results of Irradiation Treatment of Carcinoma of Uterus. E. H. Zweifel.—p. 675.
*Choice of Treatment of Hemorrhages from Female Sex Organs. H. Hirsch.—p. 691.
Roentgenotherapy of Adnexal Inflammations. G. Gambarow.—p. 698.
*Roentgenotherapy of Whooping Cough. Z. von Hrabovszky.—p. 706.
Zonal (Etappen) Irradiation with Roentgen Rays. W. Altschul.—p. 712.
Irradiation of Whole Body in Blood Diseases. W. Teschendorf.—p. 720.
Local and General Action of Roentgen Rays. A. Beck and D. Engel.—p. 729.
*Significance of Permeability of Blood Vessels in Roentgenotherapy of Malignant Growths. G. Peter.—p. 735.
Chemical, Colloidal and Biologic Action of Roentgen Rays of Variable Lengths in Relation to Ionization in Air. H. Fricke and S. Morse.—p. 749.
Measuring Roentgen-Ray Dosage by Means of Oxidation of Diluted Ferrosulphate Solution. H. Fricke and S. Morse.—p. 757.
Permeability of Animal and Human Skin in Visible Part of Spectrum. W. E. Pauli and H. Dennig.—p. 761.
Artificially Increased Permeability of Skin to Bactericidal Light Rays. W. E. Pauli and H. Kliewe.—p. 767.
Radium Therapy: Dosage. W. Lahm.—p. 773.
Peroral Administration of Radium. J. Markl.—p. 781.
Equipment of Therapeutic Roentgen-Ray Institute. G. H. Schneider.—p. 792.
Damaging Effect of Roentgen-Rays on Fetus. P. Feldweg.—p. 799.

Roentgenotherapy of Carcinoma of Uterus.—Fundus carcinomas are to be treated surgically, according to Zweifel, although good results following roentgenotherapy have been reported, especially in cases of recurrence. However, the reported results are still too few in number to permit of drawing definite conclusions.

Roentgenotherapy of Uterine Myoma and Ovarian Hemorrhage.—Hirsch records his results from the roentgen-ray treatment of seventy-two uterine myomas and forty-five cases of atypical hemorrhage mostly of ovarian origin, that had failed to yield to any other method of treatment. Bleeding stopped in all cases and the patients recovered fully both mentally and physically.

Roentgenotherapy of Whooping Cough.—Subscribing to the remarkable success attending the roentgen-ray treatment of whooping cough, Hrabovszky points out that irradiation over the liver area is preferable to irradiation of the hilus region, which is the usual method. Therefore, he feels that whooping cough is not merely an infectious disease but a manifestation of diathetic protein sensitiveness. Roentgen-ray therapy is really a form of autoprotein therapy and heteroprotein therapy.

Significance of Permeability of Blood Vessels in Roentgenotherapy.—Peter is of the opinion that a study of the permeability of blood vessels is of great importance in the etiology and in the irradiation treatment of malignant growths. He points out that in treatment better results are obtained when the tumor has a good blood supply than when it has not.

Nederlandsch Tijdschrift v. Genesskunde, Amsterdam

71: 1809-1916 (Oct. 29) 1927

Epidemiology of Postvaccinal Encephalitis in the Netherlands. J. T. Terburgh.—p. 1810.
Cowpox Vaccination and Postvaccinal Encephalitis. H. Aldershoff.—p. 1825.
Acute Anterior Poliomyelitis. E. Gorter.—p. 1830.
Case of Haemangioma Planum Extensum. C. Postma.—p. 1842.
*Endometriosis Recti. P. R. Michaël.—p. 1846.
Case of Tumor of Lung. G. F. G. Meerburg.—p. 1848.

Endometriosis Recti.—A woman complained of alternating constipation and diarrhea of six months' standing. Blood was evacuated with the feces, especially after menstruation. A large tumor was to be felt in the anterior rectal wall. A swelling was also felt in the posterior wall of the vagina, adherent to the rectum and to the uterus. On rectoscopic examination, ulceration was not seen. Carcinoma of the rectum was diagnosed. Hysterectomy was done; then, by the vaginal route, the tumor-bearing portion of the rectum was drawn through the sphincter and extirpated. The tumor was found to be endometrioma. Regarding the diagnosis, Michaël notes that he failed to accord sufficient importance to the absence of ulceration and to the increased discharge of blood with the feces after menstruation. In this case, fortunately, the operation chosen did not destroy the sphincter.

JOURNALS ABSTRACTED IN THE CURRENT MEDICAL LITERATURE DEPARTMENT, JULY-DECEMBER, 1927

Abstracts of important articles in the following journals have been made in the Current Literature Department of THE JOURNAL during the past six months. Any of the journals, except those starred, will be lent by THE JOURNAL to subscribers in the United States and to Fellows of the American Medical Association for a period not exceeding three days. Two journals may be borrowed at a time. No foreign journals are available prior to 1922, nor domestic journals prior to 1923. Requests for periodicals should be addressed to the Library of the American Medical Association and six cents in stamps should be enclosed. This covers the average expense of mailing a journal. Thus most of these journals are accessible to the general practitioner.

Acta Chirurgica Scandinavica. Stockholm.
Acta Dermatologica. Kyoto.
Acta Medica Scandinavica. Stockholm.
Acta Obstetrica et Gynecologica Scandinavica. Helsingfors.
Acta Ophthalmologica. Copenhagen.
Acta Paediatrica. Stockholm.
Acta Path. et Microbiol. Scand. Copenhagen.
Acta Psychiat. et Neurol. Copenhagen.
Acta Radiologica. Stockholm.
Acta Scholae Medicin. Univ. Imp. in Kioto. Tokyo.
Acta Tuberculosea Scandinavica. Copenhagen.
American Heart Journal. St. Louis.
American Journal of Anatomy. Philadelphia.
*American Journal of Diseases of Children. A. M. A., Chicago.
American Journal of Hygiene. Baltimore.
American Journal of the Medical Sciences. Philadelphia.
American Journal of Obstetrics and Gynecology. St. Louis.
American Journal of Ophthalmology. Chicago.
American Journal of Pathology. Boston.
American Journal of Physiology. Baltimore.
American Journal of Psychiatry. Baltimore.
American Journal of Public Health. New York.
American Journal of Roentgenology and Radium Therapy. New York.
American Journal of Surgery. New York.
American Journal of Syphilis. St. Louis.
American Journal of Tropical Medicine. Baltimore.
American Review of Tuberculosis. New York.
Anales de la Facultad de Medicina, Univ. de Montevideo.
*Anales de la Facultad de Medicina y Farmacia. Havana.
Anales des Hospitale de la Sta. Cruz. y San Paulo. Barcelona.
Anales Sociedad de Oftalmologia, etc. Mexico City.
Annaes Paulistas de Medicina e Cirurgia. São Paulo, Brasil.
Annales de Dermatologie et de Syphiligraphie. Paris.
Annales de l'Institut Pasteur. Paris.
Annales des Maladies Vénériennes. Paris.
Annales de Médecine. Paris.
Annali d'Igiene. Rome.
Annals of Internal Medicine. Ann Arbor.
Annals of Medical History. New York.
Annals of Otology, Rhinology and Laryngology. St. Louis.
Annals of Surgery. Philadelphia.
Annals of Tropical Medicine and Parasitology. Liverpool.
Archiv für Dermatologie und Syphilis. Berlin.
Archiv für Exper. Pathol. und Pharmakol. Leipzig.
Archiv für die gesamte Physiologie. Berlin.
Archiv für Gynäkologie. Berlin.
Archiv fuer Japanische Chirurgie. Kyoto.
Archiv für Kinderheilkunde. Stuttgart.
Archiv für Klinische Chirurgie. Berlin.
Archiv fur Ophthalmologie. Berlin.
Archiv für Psychiatrie. Berlin.
Archiv für Schiffs- und Tropenhygiene. Leipzig.
Archiv für Verdauungs-Krankheiten. Berlin.
*Archives of Dermatology and Syphilology. A. M. A., Chicago.
Archives of Disease in Childhood. London.
Archives Franco-Belges de Chirurgie. Brussels.
Archives de l'Institut Pasteur de Tunis. Tunis.
*Archives of Internal Medicine. A. M. A., Chicago.
Archives des Maladies de l'Appareil Digestif. Paris.
Archives des Maladies du Cœur. Paris.
Archives de Médecine des Enfants. Paris.
Archives of Medical Hydrology. London.
Archives Médicales Belges. Brussels.
Archives Médico-Chirurgicales de l'Appareil Respiratoire. Paris.
*Archives of Neurology and Psychiatry. A. M. A., Chicago.
Archives of Ophthalmology. New York.
*Archives of Otolaryngology. A. M. A., Chicago.
*Archives of Pathology and Laboratory Medicine. A. M. A., Chicago.
Archives of Physical Therapy, X-Ray, Radium. Omaha.
*Archives of Surgery. A. M. A., Chicago.
Archivi di Biologia. Genoa.
Archivio di Antropologia Criminalis, etc. Turin.
Archivio Italiano di Chirurgia. Bologna.
Archivio di Scienze Biologiche. Naples.
*Archivos Americanos de Medicina. Buenos Aires.
Archivos Argentinos del Aparato Digestivo. Buenos Aires.
Archivos de Biologia. Saõ Paulo.
Archivos Brasilleros de Medicina. Rio de Janeiro, Brasil.
*Archivos Chilenos de Pediatría. Santiago.
*Archivos de la Clinica Médica. Santiago.
Archivos de Endocrinologia y Nutricion. Madrid.
Archivos Españoles de Enfermedades del Aparato Digestivo. Madrid.
Archivos Españoles de Pediatria. Madrid.
Archivos Latino-Americanos de Pediatria. Buenos Aires.
*Arquivos da Escola Médico-Cirurgica de Nova Goa. Nova Goa.
Ars Medica. Barcelona.
Atlantic Medical Journal. Harrisburg.
Australian Journal of Experimental Biology and Medical Science. Adelaide.
Beiträge zur Klinik der Tuberk. und Spezifischen Tuberk. Berlin.
Beiträge zur klinischen Chirurgie. Berlin.
Bibliotek for Laeger. Copenhagen.
Biochemical Journal. London.
Biochemische Zeitschrift. Berlin.
*Boletin del Hospitale Civil de San Juan de Dios. Quito.
Boletín de la Sociedad de Cirugía de Chile. Santiago.
Boletín de la Sociedad de Obstetricia de Buenos Aires.
Boston Medical and Surgical Journal.
Brain, A Journal of Neurology. London.
Brasil-Medico. Rio de Janeiro.
British Journal of Actinotherapy. London.
British Journal of Anæsthesia. Manchester.
British Journal of Children's Diseases. London.
British Journal of Dermatology and Syphilis. London.
British Journal of Experimental Pathology. London.
British Journal of Medical Psychology. London.
British Journal of Ophthalmology. London.
British Journal of Radiology. London.
British Journal of Surgery. Bristol.
British Journal of Tuberculosis. London.
British Medical Journal. London.
Bruxelles-Médical. Brussels.
Bulletin de l'Académie de Médecine. Paris.
Bulletin of the Association of American Medical Colleges. Chicago.
Bulletin of the Johns Hopkins Hospital. Baltimore.
Bulletin Médical. Paris.
Bulletin of the Naval Medical Association. Tokyo.
Bulletin of New York Lying-In Hospital.
Bulletin of Porto Rico Medical Association Journal. San Juan.
Bulletin de la Société Française de Dermatologie et de Syphiligraphie. Paris.
Bulletin de la Société d'Obstétrique et de Gynécologie. Paris.
Bulletin de la Société des Sciences Médicales. Montpellier.
Bulletins et Mémoires de la Soc. Méd. des Hôp. de Paris. Paris.
California and Western Medicine. San Francisco.
Canadian Medical Association Journal. Montreal.
Ceylon Journal of Science. Ceylon.
China Medical Journal. Shanghai.
Chinese Journal of Physiology. Peking.
Clinica. Buenos Aires.
Clinica Chirurgica. Milan.
Clinica y Laboratorio. Zaragoza.
Clinica Medica Italiano. Milan.
Colorado Medicine. Denver.
Comptes Rendus des Séances de la Société de Biologie. Paris.
Crónica Médica. Lima, Peru.
Dermatologische Wochenschrift. Leipzig.
Deutsche Medizinische Wochenschrift. Leipzig.
Deutsche Zeitschrift für Chirurgie. Leipzig.
Deutsches Archiv für Klin. Med. Leipzig.
Difesa Sociale. Rome.
Écho Médicale du Nord. Lille.
Edinburgh Medical Journal.
Encéphale. Paris.
Endocrinology. Los Angeles.
Estudios Medicos. Murcia.
Finska Läkaresällskapets Handlingar. Helsingfors.
Folha Medica. Rio de Janeiro.
Folia Haematologica. Leipzig.
Fortschritte der Medizin. Berlin.
Frankfurter Zeitschrift für Pathologie. Munich.
Gaceta Medica de Mexico. Mexico City.
Gann. Tokyo.
Gazette Hebdomadaire des Sciences Médicales. Bordeaux.

*Cannot be loaned.

Gazette des Hôpitaux. Paris.
Gazzetta degli Ospedali e delle Cliniche. Milan.
Giornale Italiano Dermatologia e Sifilogia. Milan.
Glasgow Medical Journal.
Gynécologie et Obstétrique. Paris.
Heart. London.
Hospitalstidende. Copenhagen.
Hygiea. Stockholm.
Igiene Moderna. Genoa.
Illinois Medical Journal. Oak Park.
Indian Journal of Medical Research. Calcutta.
Indian Medical Gazette. Calcutta.
Indian Medical Record. Calcutta.
International Journal of Psycho-Analysis. London.
Irish Journal of Medical Science. Dublin.
*Irkutskiy Meditsinskiy Jurnal. Irkutsk.
Jahrbuch für Kinderheilkunde. Berlin.
Japan Medical World (Nippon-No-Ikai Sha). Tokyo.
Japanese Journal of Medical Sciences; Pharmacology. Tokyo.
Japanese Journal of Obstetrics and Gynecology. Kyoto.
Japanese Journal of Pharmacology. Kyoto.
Journal of Anatomy. London.
Journal of the Arkansas Medical Society. Little Rock.
Journal of Bacteriology. Baltimore.
Journal of Biochemistry. Tokyo.
Journal of Biological Chemistry. Baltimore.
Journal of Bone and Joint Surgery. Boston.
Journal of Cancer Research. New York.
Journal of Chemotherapy. Baltimore.
Journal de Chirurgie. Paris.
Journal of Clinical Investigation. Baltimore.
Journal of Comparative Neurology. Philadelphia.
Journal of Comparative Psychology. Baltimore.
Journal of Experimental Medicine. New York.
Journal of the Florida Medical Association. Jacksonville.
Journal of General Physiology. New York.
Journal of Hygiene. London.
Journal of Immunology. Baltimore.
Journal of the Indiana State Medical Association. Fort Wayne.
Journal of Industrial Hygiene. Boston.
Journal of Infectious Diseases. Chicago.
Journal of Iowa State Medical Society. Des Moines.
Journal of Kansas Medical Society. Topeka.
Journal of Laboratory and Clinical Medicine. St. Louis.
Journal of Laryngology and Otology. Edinburgh.
Journal of Maine Medical Association. Portland.
Journal de Médecine. Lyons.
Journal de Médecine de Bordeaux et du Sud-Ouest. Bordeaux.
Journal of Medical Association of Georgia. Atlanta.
Journal of the Medical Association of South Africa. Cape Town.
Journal of Medical Society of New Jersey. Orange.
Journal of Mental Science. London.
Journal of Michigan State Medical Society. Grand Rapids.
Journal of Missouri State Medical Association. St. Louis.
Journal of Nervous and Mental Disease. New York.
Journal of Neurology and Psychopathology. London.
Journal of Obstetrics and Gynecology. Manchester.
Journal of Oklahoma State Medical Association. Muskogee.
Journal of Oriental Medicine. Dairen, South Manchuria.
Journal of Pathology and Bacteriology. Edinburgh.
Journal of Pharmacology and Exper. Therap. Baltimore.
Journal of the Philippine Islands Medical Association. Manila.
Journal de Physiologie et de Pathologie Générale. Paris.
Journal des Practiciens. Paris.
Journal of Preventive Medicine. Chicago.
Journal de Radiologie et d'Electrologie. Paris.
Journal of South Carolina Medical Association. Greenville.
Journal of State Medicine. London.
Journal of Tennessee State Medical Association. Nashville.
Journal of Tropical Medicine and Hygiene. London.
Journal d'Urologie Médicale et Chirurgicale. Paris.
Journal of Urology. Baltimore.
Kentucky Medical Journal. Bowling Green.
Kenya and East African Medical Journal. Nairobi.
Klinicheskaya Meditsina. Moscow.
Klinische Wochenschrift. Berlin.
Kyoto Medical Society Journal. Kyoto.
Lancet. London.
Laryngoscope. St. Louis.
Lisboa Médica. Lisbon.
Lyon Chirurgical. Paris.
Lyon Médical. Lyons.
Médecine. Paris.
Medical Journal of Australia. Sydney.
Medical Journal and Record. New York.
Medicina Argentina. Buenos Aires.
Medicina Ibera. Madrid.
Medicina de los Niños. Barcelona.
Medicine. Baltimore.
Medizinische Klinik. Berlin.
Memorias do Instituto Oswaldo Cruz. Rio de Janeiro.
Mikrobiologischeskiy Jurnal. Leningrad.
Military Surgeon. Washington.
Minnesota Medicine. St. Paul.
Mitteilungen und Allgemeine Pathologie und Path. Anat. Tokyo.
Mitteilungen aus den Grenzgebieten der Med. und Chir. Jena.
Monatsschrift für Geburtshülfe und Gynäkologie. Berlin.
Monatsschrift für Kinderheilkunde. Leipzig.
Münchener Medizinische Wochenschrift. Münich.
National Medical Journal of China. Shanghai.
Nebraska State Medical Journal. Lincoln.
Nederlandsch Maandschrift voor Geneeskunde. Leiden.
Nederlandsch Tijdschrift voor Geneeskunde. Haarlem.
New Orleans Medical and Surgical Journal.
New York State Journal of Medicine. New York.
Norsk Magazin for Lægevidenskaben. Oslo.
Northwest Medicine. Seattle.
Nourrisson. Paris.
Occupational Therapy and Rehabilitation. Baltimore.
Ohio State Medical Journal. Columbus.
Okayama-Igakki-Zasshi (Journal of Okayama Medical Society).
Oriental Journal of Diseases of Infants. Kyoto.
Ospedale Maggiore. Milan.
Paris Médical.
Pediatria. Naples.
Pediatría Española. Madrid.
Philippine Journal of Science. Manila.
Physical Therapeutics. Baltimore.
Physiological Reviews. Baltimore.
Policlinico (sez. chir.), (sez. med.) and (sez. prat.). Rome.
Practitioner. London.
Prensa Médica Argentina. Buenos Aires.
Presse Médicale. Paris.
Proceedings of the Society for Experimental Biology and Medicine. Utica, N.Y.
Profilakticheskaya Meditsina. Kharkov.
Progrès Médical. Paris.
Progresos de la Clinica. Madrid.
Psychiatric Quarterly. Utica, N.Y.
Public Health Journal. Toronto.
Public Health Reports. Washington.
Quarterly Journal of Experimental Physiology. London.
Quarterly Journal of Medicine. London.
Radiology. St. Paul.
Rassegna Internazionale di Clinica e Terapia. Naples.
Revista de la Asociacion Medica Argentina. Buenos Aires.
Revista de Biologia e Hygiene. São Paulo.
Revista Española de Obstetricia y Ginecología. Madrid.
Revista de Especialidades. Buenos Aires.
Revista de Hygiene y de Tuberculosis. Valencia.
Revista Ibero-Americana de Ciencias Médicas. Madrid.
Revista Médica de Barcelona.
Revista de Medica Cirurgica de Brasil. Rio de Janeiro.
Revista Medica Latino-Americano. Buenos Aires.
Revista Medica del Rosario. Rosario de Santa Fe.
Revista Médica del Uruguay. Montevideo.
*Revista de Medicina. Rosario de Santa Fe, Argentina.
Revista de Medicina y Cirugía de la Habana. Havana.
*Revista Medico-Quirurgica de los Hospitales. Bogotá, Colombia.
Revista Mexicana de Biología. Mexico City.
Revista de la Sociedad Argentina de Biología. Buenos Aires.
Revista de la Sociedad de Medicina Interna y de Tisiología. Buenos Aires.
Revue de Chirurgie. Paris.
Revue Française de Gynécologie et d'Obstétrique. Paris.
Revue Française de Pédiatrie. Paris.
Revue Médicale de la Suisse Romande. Geneva.
Revue Neurologique. Paris.
Rhode Island Medical Journal. Providence.
Riforma Medica. Naples.
Rivista di Clinica Medica. Florence.
Rivista di Clinica Pediatrica. Florence.
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Russkaia Klinika. Moscow.
*Russkiy Vestnik Dermatologie. Moscow.
Sang. Paris.
Scalpel. Brussels.
Schweizerische Medizinische Wochenschrift. Basel.
Sciencia Medica. Rio de Janeiro, Brasil.
Sei-I-Kwai Medical Journal. Tokyo.
Semana Médica. Buenos Aires.
*Seuchenbekämpfung-Infektionskrankheiten. Vienna.
Siglo Médico. Madrid.
Southern Medical Journal. Birmingham.
Southwestern Medicine. Phoenix.
Strahlentherapie. Berlin.
Surgery, Gynecology and Obstetrics. Chicago.
Svenska Läkaresällskapets Handlingar. Stockholm.
Texas State Journal of Medicine. Fort Worth.
Tohoku Journal of Experimental Medicine. Sendai.
Transactions of Royal Society of Tropical Medicine and Hygiene. London.
Tubercle. London.
Ugeskrift for Læger. Copenhagen.
United States Naval Medical Bulletin. Washington.
United States Veterans' Bureau Medical Bulletin. Washington.
Upsala Läkareförenings Förhandlingar. Upsala.
Vestnik Microbiologii i Epidemiologii. Saratov.
*Vestnik Roentgenologii i Radiologii. Leningrad.
Vida Nueva. Havana.
Virchow's Archiv für pathologische Anatomie und Physiologie für klinische Medizin. Berlin.
Virginia Medical Monthly. Richmond.
West Virginia Medical Journal. Charleston.
Wiener Archiv für Innere Medizin. Berlin.
Wiener Klinische Wochenschrift. Vienna.
Wisconsin Medical Journal. Milwaukee.
Zeitschrift fur Geburtshülfe und Gynäkologie. Stuttgart.
Zeitschrift für die gesamte Experimentelle Medizin. Berlin.
Zeitschrift für die gesamte Neurologie und Psychiatrie. Berlin.
Zeitschrift für Hygiene und Infektionskrankheiten. Berlin.
Zeitschrift für Immunitätsforschung und Experimentelle Therapie. Jena.
Zeitschrift für Kinderheilkunde. Berlin.
Zeitschrift für Klinische Medizin. Berlin.
Zeitschrift für Krebsforschung. Berlin.
Zeitschrift für Kreislaufforschung. Dresden.
Zeitschrift für Tuberkulose. Leipzig.
Zeitschrift für Urologische Chirurgie. Berlin.
Zentralblatt für Chirurgie. Leipzig.
Zentralblatt für Gynäkologie. Leipzig.
Zentralblatt für Innere Medizin. Leipzig.

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SUBJECT INDEX

This is an index to all the reading matter in THE JOURNAL. In the Current Medical Literature Department only the articles which have been abstracted are indexed.

The letters used to explain in which department the matter indexed appears are as follows: "E," Editorial; "C," Correspondence; "P," Propaganda for Reform; "ME," Medical Economics; "T," Therapeutics; "ab," abstract; the star (*) indicates an original article in THE JOURNAL.

This is a subject index and one should, therefore, look for the subject word, with the following exceptions: "Book Notices," "Deaths," "Medicolegal Abstracts" and "Society Proceedings" are indexed under these titles at the end of the letters "B," "D," "M" and "S." State board examinations are entered under the general heading State Board Reports, and not under the names of the individual states. Matter pertaining to the Association is indexed under "American Medical Association." The name of the author, in brackets, follows the subject entry.

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Acad.—Academy	*M.—Medical.*
Am.—American	*Med.—Medicine*
A.—Association	*Nat.—National*
Coll.—College	*Phar.—Pharmaceutical*
Conf.—Conference	*Phys.—Physicians*
Cong.—Congress	*Ry.—Railway*
Conv.—Convention	*S.—Surgical*
Dist.—District	*Soc.—Society*
Hosp.—Hospital	*Surg.—Surgery,*
Internat.—International	*Surgeon*

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